

Technical Memorandum

Fourth Quarter 2012 (4Q12) Update for Ponds 16S and 18A RCRA Pond Phosphine Assessment Study

January 25, 2013

1.0 INTRODUCTION

This technical memorandum (“tech memo”) documents the fourth quarter 2012 (4Q12) update of the phosphine assessment study evaluations for Ponds 16S and 18A as proposed in Section 5.0 of the *Technical Memorandum - Third Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study* (“3Q12 Update Tech Memo,” MWH, 2012e) and is the fourth update to the *RCRA Pond Phosphine Assessment Study Report* (“*Assessment Study Report*,” MWH, 2012). Updated tabulated data, graphical evaluations and any recommendations for modification of the assessment study monitoring program at Pond 16S and/or 18A are included in this tech memo.

This tech memo follows the same organization as the *Assessment Study Report*. The Ponds 16S and 18A 4Q12 monitoring programs are summarized in Section 2, monitoring results are summarized in Section 3, updated evaluations of cumulative results are contained in Section 4, and Section 5 presents updated interim findings and recommendations.

FMC submitted the *Framework for Post-Closure Phosphine Monitoring - RCRA Ponds* (“*Framework*,” MWH, 2012d) concurrently with the 2Q12 Update Tech Memo and provided written responses to EPA’s *Draft Comments on FMC’s July 16, 2012, Framework for Post-Closure Phosphine Monitoring RCRA Ponds, FMC Facility, Pocatello, ID* (“*EPA Draft Comments*,” EPA, 2012), as clarified during an EPA-FMC conference call on September 14, 2012, concurrently with the 3Q12 Update Tech Memo. Pursuant to FMC’s response to the *EPA Draft Comments*, a draft of Section 3 (RCRA Pond Gas Monitoring Program) for the amended RCRA Pond Post-Closure Plan was submitted to EPA on December 14, 2012 and the Framework for Post-Closure Operation and Maintenance of RCRA Pond Gas Extraction and Treatment Systems was submitted on December 20, 2012.

2.0 MONITORING PROGRAMS AT POND 16S AND 18A DURING 4Q12

Section 2 of the *Assessment Study Report* summarized the monitoring elements and timeline of the RCRA Pond UAO and Assessment Study work plans performed through December 2011 and Section 2 of the *Technical Memorandum - First Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study* (“1Q12 Update Tech Memo,” MWH, 2012b), *Technical Memorandum - Second Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study* (“2Q12 Update Tech Memo,” MWH, 2012c) and 3Q12 Update

Tech Memo updated the monitoring elements for Ponds 16S and 18A during 1Q12, 2Q12 and 3Q12. Those summaries are not repeated here.

The elements, timeline and schedule of monitoring at Ponds 16S and 18A during 4Q12 pursuant to the *RCRA Pond UAO Air Monitoring Plan – Part I* (“*Air Monitoring Plan*,” MWH, 2011) and modified as recommended in the *1Q12 Update Tech Memo* and for the Pond 16S TMP appurtenance leak detection monitoring as described in RCRA Pond UAO Weekly Report #114 are summarized below:

Pond	Cap Perimeter Surface Scan and Appurtenance Monitoring ^{1,2}			
	Frequency	Initiated	End of 1 st Year	Frequency 4Q12
18A	Monthly	May 2012 ³	NA	Monthly
16S (perim ≥ 2,000)	Monthly	April 2012 ⁴	NA	Monthly

¹ Appurtenance monitoring includes air release (breathing zone) and leak detection. Contingent cap surface and/or low-lying areas monitoring would be on same schedule if triggered.

² Pursuant to RCRA Pond UAO Weekly Report #114 (October 17, 2012), the GETS piping from the TMP enclosure to the solenoid valve was added to the Pond 16S appurtenance leak detection monitoring procedures beginning during the November 2012 monitoring event.

³ As recommended in the *1Q12 Update Tech Memo*, FMC increased the Pond 18A perimeter surface scan and appurtenance monitoring frequency to monthly beginning in May 2012 to align the Pond 18A monitoring with the Pond 16S monitoring with respect to the *Air Monitoring Plan*.

⁴ As reported in the *1Q12 Update Tech Memo*, the Pond 16S north perimeter pipe monitoring result on April 3, 2012 was greater than 2,000 ppm, which triggered monthly cap perimeter and appurtenance monitoring pursuant to the *Air Monitoring Plan*. Monthly cap perimeter and appurtenance monitoring was initiated in April (performed on April 4, 2012).

The Pond 16S soil gas, perimeter pipe standpipe and TMP monitoring and Pond 18A soil gas and perimeter pipe standpipe monitoring performed pursuant to the *Assessment Study Work Plan* as modified by the *Assessment Study Report* is summarized below:

Pond	Monitoring	Sampling Pts	Start Monitoring	Frequency 4Q12
18A	Soil Gas ¹	10 / 8	Oct-10	Monthly
	Perim Pipe	2	Dec-10	Monthly
16S	Soil Gas	14	Dec-10	Monthly
	Perim Pipe	4	Oct-10	Monthly
	TMP	8	Nov-10	Monthly

¹ Shallow / step-out soil gas sampling points. Step-outs installed during week of April 25, 2011 and monitoring commenced May 4, 2011.

3.0 RESULTS OF MONITORING AT POND 16S AND 18A

Section 3 of the *Assessment Study Report* summarized the RCRA Pond UAO monitoring results through January 13, 2012. Those results are not repeated here, with the exception of the tables of monitoring results for Ponds 16S and 18A that have been updated as described below.

The 4Q12 (October through December) Pond 16S and 18A monitoring results have been submitted electronically to EPA in the monthly RCRA Pond UAO reports through December 2012. The Pond 16S and 18A monitoring results through January 8, 2013 that will be reported with the full January 2013 monthly report are summarized in this section. Monitoring results through January 8, 2013 were used for the data evaluations presented in this 4Q12 tech memo. This is similar to the conventions for the *1Q12 Update Tech Memo* (which included data through April, the first month of the second quarter), the *2Q12 Update Tech Memo* (which included data through July, the first month of the third quarter) and the *3Q12 Update Tech Memo* (which included data through October, the first month of the fourth quarter). As a result, October data is repeated herein.

3.1 Pond 16S

As reported in the *Technical Memorandum - First Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study* (“*1Q12 Update Tech Memo*,” MWH, 2012b), the Pond 16S north perimeter pipe monitoring result on April 3, 2012 was greater than 2,000 ppm, which triggered monthly cap perimeter surface scan and appurtenance monitoring. As shown on Table 3.3b (Updated 4Q12), phosphine (PH₃) was not detected during the 4Q12 perimeter surface scan events. The January 2013 perimeter surface scan had not been performed at Pond 16S due to snow cover from January 1 through (at least) January 11, 2013 so the January perimeter surface scan results are not included in this 4Q12 *Update Tech Memo*. If weather / surface conditions allow a perimeter surface scan at Pond 16S to be completed during January 2013, the results will be reported in the monthly RCRA Pond UAO report for January 2013.

Phosphine was not detected during the 4Q12 appurtenance ambient air monitoring at Pond 16S as shown on Table 3.10 (Updated 4Q12). Phosphine was not detected during appurtenance leak detection and inside appurtenance monitoring at Pond 16S during 4Q12 with the following exceptions:

- Low PH₃ reported (0.04 ppm) inside cap drainage lift station 1 during the October 2012 monitoring event;
- Low PH₃ reported (0.06 ppm) inside cap drainage lift station 2 during the October 2012 monitoring event;
- Low PH₃ reported (0.05 and 0.03 ppm) inside LCDRS sump 1 during the October and November 2012 monitoring events;
- Phosphine reported (2.62 ppm) inside the TMP 4 enclosure, 0.30 ppm inside and 0.02 ppm reported for the leak detection monitoring at the base of the TMP 5 enclosure, and

0.33 ppm inside the TMP 8 enclosure during the October 9, 2012 monitoring event. The TMPs on Pond 16S had been opened in September for the annual calibration of the thermocouples (as required by the current Pond 16S RCRA Post-Closure Plan), and tightened appropriately at that time. Subsequent lower ambient temperatures caused contraction of the steel flanges that evidently resulted in loosening of some of the flange bolts. Loose bolts were tightened on the flanges at these TMPs and the inside appurtenance re-monitoring results were 0.00 ppm at TMP 4 on October 9 and 0.00 ppm at TMPs 5 and 8 on October 12, 2012; and,

- Phosphine reported (17 ppm) inside and at the pipe opening (4.46 ppm) at TMP 4 enclosure, and inside the TMP 6 enclosure (0.07 ppm) during the November 6, 2012 monitoring event. Although the flange bolts at these TMPs had been tightened during October, the flange bolts at TMPs 4 and 6 had apparently loosened slightly due to additional thermal contraction. The bolts were tightened on the flanges at these TMPs and the TMP 4 gasket was sealed with silicon and the re-monitoring results were 0.00 ppm at TMP 4 and TMP 6 on November 7, 2012.

In addition to the appurtenance monitoring PH3 detections described above, a technician performing monitoring at Pond 16S TMP 8 had an IH alarm (0.38 ppm) on October 12, 2012. He immediately relocated to an area where PH3 was less than 0.3 ppm in accordance with the RCRA Pond Work Rules and then commenced an investigation of the source and then a low-lying area investigation. Phosphine was not detected during the low-lying area investigation. The source was determined to be associated with piping in the TMP-eductor-extraction (GETS) system installed on Pond 16S, specifically a ball-valve in the extraction piping that had begun to leak slightly, allowing a small amount of PH3 to be detected at the drain valve in the line. The drain valve (left open as the final step after the monthly Pond 16S TMP sampling to complete a fresh air purge) was immediately closed, and other valves closed to isolate the faulty ball valve. The ball valve was replaced and PH3 re-monitoring results were 0.00 ppm at TMP 8 on October 12, 2012. As described in RCRA Pond UAO Weekly Report #114 (October 17, 2012), the TMP appurtenance monitoring procedure for Pond 16S was modified to include leak detection monitoring of the GETS extraction piping components from the TMP enclosure to the solenoid valve at the Pond 16S TMPs beginning with the November 2012 monitoring event.

Soil gas monitoring was performed at Pond 16S monthly during October 2012 through January 2013 as shown on Table 3.11 (Updated 4Q12). Phosphine was not detected in the breathing zone or near (4 to 6 inches above) the ground surface during any of the soil gas monitoring events at Pond 16S from December 2010 through January 8, 2013. Phosphine was detected in all fourteen of the soil gas probes during the 4Q12 monitoring events. Of the total 56 soil gas readings (4 monitoring events at the 14 probes) during October 2012 through January 2013, 18 (32%) of the readings were 0.00 ppm PH3. The PH3 results ranged from 0.01 to 92 ppm for the 38 non-zero PH3 readings. Sixteen (42%) of the 38 non-zero readings were below 0.3 ppm, one (3%) was between 0.3 and 1.0 ppm, thirteen (34%) were between 1.0 and 10 ppm, and eight (21%) were above 10 ppm PH3. The highest PH reading (92 ppm) was recorded at probe 11 (located

immediately west of the north perimeter pipe standpipe) during the January 8, 2013 monitoring event. Soil gas probe 11 was also the location of the highest soil gas measurement through the Assessment Study monitoring to date (439 ppm on March 6, 2012).

Pond perimeter gas collection pipe monitoring at Pond 16S was performed monthly during October 2012 through January 2013 as shown on Table 3.9b (Updated 4Q12). All four standpipes (north, south, east and west) were monitored. Phosphine was not detected in the breathing zone during any of the perimeter pipe monitoring events at Pond 16S. Phosphine was detected in the perimeter pipe source gas at concentrations ranging from 104 ppm (at west standpipe) to 4,576 ppm (at north standpipe) on October 9, 2012. Perimeter pipe source gas PH3 concentrations generally remained within the same range during 4Q11 and the January 2013 results ranged from 57 ppm at the west standpipe to 5,038 ppm at the north standpipe.

Temperature monitoring point (TMP) monitoring at Pond 16S was performed monthly during October 2012 through January 2013, as shown on Table 3.12 (Updated 4Q12). Phosphine was not detected in the breathing zone during any of the TMP monitoring events at Pond 16S. During October 2012, PH3 concentrations ranged from 3,742 to 48,772 ppm in individual TMPs and averaged 22,393 ppm. As expected, PH3 concentrations continued to increase (“rebound”) during 4Q12 and, in January 2013, PH3 concentrations ranged from 5,664 to 52,449 ppm in individual TMPs and averaged 22,737 ppm. A more detailed discussion of the Pond 16S TMP, perimeter pipe and soil gas monitoring results is presented in Section 4.0.

3.2 Pond 18A

As recommended in the *1Q12 Update Tech Memo*, FMC increased the Pond 18A perimeter surface scan and appurtenance monitoring frequency to monthly beginning in May 2012 to align the Pond 18A monitoring with the Pond 16S monitoring with respect to the *Air Monitoring Plan*. Monthly perimeter surface scans were performed October 2012 through January 2013 as shown on Table 3.3b. As reported in RCRA Pond UAO Weekly Report #118 (November 14, 2012), PH3 was detected (0.06 ppm and 0.16 ppm) during the November 8, 2012 perimeter surface scan monitoring at Pond 18A. The 0.06 ppm perimeter surface scan reading was located on the eastern most end of Pond 18A and investigation identified an area about 5 feet in diameter around the detection where a maximum concentration of 0.03 ppm was detected immediately above the ground surface (1 to 2 inches above ground surface), but not at greater distance above the ground. The breathing zone measurements were 0.00 ppm. Phosphine was not detected at ground level or in the breathing zone during PH3 monitoring of the adjacent low-lying area. The 0.16 ppm PH3 perimeter surface scan reading was located on the northern side of Pond 18A, between soil gas probes SG-4 and SG-5. The investigation identified an area approximately 6 feet wide by 40 feet long where a maximum concentration of 0.21 ppm was detected at 1 to 2 inches above ground surface, but not at greater distance above the ground. The breathing zone measurements were 0.00 ppm. Phosphine was not detected at ground level or in the breathing

zone during PH3 monitoring of the adjacent low-lying area. The full cap surface scan conducted pursuant to the *Air Monitoring Plan* identified only one location in Cell #2 with a reading of 0.02 ppm at 1 to 2 inches above ground surface, but not at greater distance above the ground. The breathing zone measurements were 0.00 ppm. Inspection of the identified areas of detections did not locate rodent activity or surface / soil conditions (e.g., cracks or rills) as a possible source.

The barometric pressure data for the days prior to the surface scan showed a steady and strong falling barometric pressure (a fall of greater than 0.6 inches of mercury over the about 48 hours prior to the monitoring event). The strongly falling pressure was related to a series of storms in the area. Snow fell on November 9 through 11, 2012 and did not melt sufficiently to re-monitor the area until November 14, 2012. As reported in RCRA Pond UAO Weekly Report #119 (November 20, 2012), re-monitoring perimeter surface scan was conducted as soon as surface and meteorological conditions allowed at Pond 18A on November 14, 2012 and all readings were 0.00 ppm. Phosphine was not detected during the October and December 2012 perimeter surface scan events at Pond 18A. The January 2013 perimeter surface scan had not been performed at Pond 18A due to snow cover from January 1 through (at least) January 11, 2013 so the January perimeter surface scan results are not included in this 4Q12 *Update Tech Memo*. If weather / surface conditions allow a perimeter surface scan at Pond 18A to be completed during January 2013, the results will be reported in the monthly RCRA Pond UAO report for January 2013.

Monthly appurtenance monitoring was performed October 2012 through January 2013 as shown on Table 3.14 (Updated 4Q12). Phosphine was not detected during the 4Q12 appurtenance ambient air and leak detection monitoring events at Pond 18A. Phosphine was not detected during the inside appurtenance monitoring with the exception of PH3 reported inside the LS-01 manhole at 0.05 ppm during the October 2012 monitoring event and inside the LCDRS sump at 0.04 ppm during the January 2013 monitoring event.

Shallow and step-out soil gas monitoring was performed at Pond 18A monthly during October 2012 through January 2013 as shown on Table 3.16 (Updated 4Q12). Phosphine was not detected in the breathing zone or near (4 to 6 inches above) the ground surface during any of the shallow or step-out soil gas monitoring events at Pond 18A. Phosphine was detected in six of the ten shallow and five of the ten step-out soil gas probes during the 4Q12 monitoring events. Of the total 40 shallow soil gas readings (4 monitoring events at the 10 shallow probes) during October 2012 through January 2013, 26 (65%) of the readings were 0.00 ppm PH3. The PH3 results ranged from 0.02 to 84 ppm for the 14 non-zero PH3 readings. Six (43%) of the 14 non-zero readings were below 0.3 ppm, one (7%) was between 0.3 and 1.0 ppm, four (28%) were between 1.0 and 10 ppm, and three (21%) were above 10 ppm PH3. The highest PH3 reading (84 ppm) was recorded at probe 4 during the December 3, 2012 monitoring event. Soil gas probe 4 was also the location of the highest soil gas measurement during the Assessment Study monitoring to date (over 1,000 ppm during the February and March 2011 monitoring events).

performed just prior to and immediately after initiation of gas extraction and treatment at Pond 18A). Of the total 32 step-out soil gas readings (4 monitoring events at the 8 step-out probes) during October 2012 through January 2013, 23 (72%) of the readings were 0.00 ppm PH3. The PH3 results ranged from 0.01 to 0.99 ppm for the nine non-zero PH3 readings. Eight (89%) of the 9 non-zero readings were below 0.3 ppm and one (11%) was between 0.3 and 1.0 ppm.

Pond perimeter gas collection pipe monitoring at the south and east standpipes was performed monthly during October 2012 through January 2013 as shown on Table 3.9b (Updated 4Q12). The PH3 concentrations in the south and east perimeter pipe source gas ranged from 691 to 2,122 ppm and 3,184 to 9,937 ppm, respectively, during 4Q12. A more detailed discussion of the Pond 18A perimeter pipe and soil gas monitoring results is presented in Section 4.0.

4.0 EVALUATION OF MONITORING RESULTS

The Ponds 16S and 18A monitoring results through January 8, 2013 were used to complete the data evaluation updates presented below.

4.1 Pond 16S

As stated in the *Assessment Study Report*, the concept for the assessment monitoring at Pond 16S during the study period has been to evaluate the “rebound” of PH3 concentrations beneath the final cap in order to develop a relationship between PH3 concentrations in TMPs, pond perimeter piping, perimeter soil gas and the potential for detection (release) of PH3 in ambient air at levels that could represent a risk to human health and the environment.

Figure 4-3 (Updated 4Q12) shows the Pond 16S average TMP and average and individual perimeter pipe standpipe monitoring results for November 30, 2010 through January 8, 2013 (111 weeks). As shown on the figure, the average TMP concentrations did not increase significantly and followed an essentially flat trend during 4Q12 compared to the increasing trend from December 2010 through 3Q12. An exponential regression using Microsoft Excel provides the best fit for the TMP data and yields a high coefficient of prediction (R^2) of 0.96, although the flat trend during 4Q12 decreased R^2 from 0.98 as presented in the *3Q12 Update Tech Memo*.

As shown on Figure 4-4 (Updated 4Q12), the average TMP PH3 concentration trend remained representative of individual TMPs during 4Q12. The average TMP concentration trend line remained very close to the TMP 7 (south side) trend, TMP 1 (north) and TMPs 5 and 6 (south) trend lines remained above the average trend, and TMPs 2, 3, 4 and 8 (north) trend lines remained below the average trend. The average TMP concentration increased only about 1.5% during 4Q12. An increasing trend was evident at TMPs 2, 3 and 4 with PH3 concentrations increasing about 37, 26 and 51 percent, respectively, over the quarter. The flat trend for the average TMP PH3 concentration was influenced by the modest increase at TMPs 5 and 8 of 8

and 10 percent, respectively, and the decreasing PH3 concentrations at TMPs 1, 6 and 7 of 19, 5 and 13 percent, respectively.

The Pond 16S perimeter pipe PH3 monitoring results are shown on Figure 4-5 (Updated 4Q12). Similar to TMP PH3 concentrations, perimeter pipe PH3 concentrations did not increase significantly and followed an essentially flat trend during 4Q12 compared to the increasing trend from December 2010 through 3Q12. The spatial variability of PH3 concentrations between the four standpipes continued through 4Q12. The highest PH3 concentrations were measured at the north standpipe and the next highest concentrations were measured at the east standpipe. The south and west standpipe PH3 concentrations remained one to two orders of magnitude lower than the north and east standpipes. An exponential regression using Microsoft Excel provides the best fit for the average perimeter pipe data and yields a fair coefficient of prediction (R^2) of 0.79 which is a moderately improved R^2 than the regression on the data through October 2012 (R^2 of 0.76) as presented in the *3Q12 Update Tech Memo*. The results of regression evaluation on the north and east perimeter pipe data remained similar to the average (e.g., exponential curve, R^2).

As described in the *Assessment Study Report* and *1Q12, 2Q12 and 3Q12 Update Tech Memos*, the variability of perimeter pipe monitoring results is likely influenced by the trend in barometric pressure preceding the monitoring event. Observationally, higher PH3 concentrations in perimeter pipe are associated with a falling barometer while concentrations tend to decrease during a rising barometer. The monitored PH3 concentration in perimeter pipe appears to be influenced by a changing barometric pressure trend over 24 or more hours prior to monitoring and not the absolute barometric pressure at the time of monitoring. The barometric pressure was relatively steady (a pressure change of 0.2 inches Hg or less) during the 24 hours preceding the October 2012 through January 2013 Pond 16S perimeter pipe monitoring events and, therefore, the 4Q12 perimeter pipe monitoring results do not appear to have been significantly influenced by trends in barometric pressure.

The Pond 16S soil gas monitoring results are shown on Figure 4-7 (Updated 4Q12). Unlike the results through January 2012, PH3 was detected in all of the soil gas probes during 1Q12 through 4Q12 (i.e., all 4 quarters of 2012). Phosphine concentrations greater than 20 ppm were measured during the March 6, 2012 monitoring at probes 5 and 6 (south side, near the south standpipe); probes 9 and 10 (north side, near west end); and, 11 and 12 (north side, near the north standpipe). The PH3 concentration at probe 12 was also greater than 20 ppm during the April 3, 2012 monitoring. However, the soil gas PH3 concentrations were much lower during the May through September monitoring events with the highest reading of 11.97 ppm at probe 11 in September 2012. The soil gas PH3 concentrations were higher (and greater than 20 ppm) during the October and December 2012 and January 2013 monitoring events. The highest readings of 85 and 92 ppm were at probe 11 (north side, immediately west of the north standpipe) during

October 2012 and January 2013, and 135 ppm at probe 12 (north side, immediately east of the north standpipe) during December 2012.

As an update, the data sets from soil gas probes 5, 11 and 12 (the rationale for evaluating these soil gas results is described in the *Assessment Study Report*) were re-evaluated for trend using the non-parametric Mann-Kendall test, two-sided at the 95% confidence level ($\alpha = 0.05$). The Mann-Kendall test for trend is recommended as a robust non-parametric test for trends in data over time. For these data sets $n=27$ and the critical Z-score equals 1.97 (if $|Z| > 1.97$, then $p < 0.05$ and trend is significant). The results of the Mann-Kendall trend tests are summarized below:

- Probe 5 shows an increasing trend (Z-score of 2.45, p-value of 0.014);
- Probe 11 shows an increasing trend (Z-score of 4.0, p-value of 6E-5); and,
- Probe 12 shows an increasing trend (Z-score of 3.59, p-value of 3E-4).

The 4Q12 trend results for data through January 8, 2013 continue to show increasing trends at probes 5, 11 and 12 (same as the test for trend results for the 3Q12 data through October 9, 2012).

As described in the *Assessment Study Report*, the soil gas monitoring results are likely influenced by the trend in barometric pressure preceding the monitoring event similar to the perimeter pipe results. However, as described above, the barometric pressure was relatively steady (a pressure change of 0.2 inches Hg or less) during the 24 hours preceding the October 2012 through January 2013 Pond 16S perimeter pipe and soil gas monitoring events and, therefore, the 4Q12 soil gas monitoring results do not appear to have been significantly influenced by trends in barometric pressure. The soil gas results for probes 11 and to lesser degree probes 5 and 12 exhibited a pattern of temporal variability similar to the north and east perimeter pipe monitoring results, although with a much lower magnitude, during 2011 and 1Q and 2Q12 as shown on Figure 4-8 (Updated 4Q12). The barometric pressure was relatively steady during the 24 hours preceding the 3Q12 monitoring events and those soil gas monitoring results were far lower than the March 6, 2012 results that represent maximum soil gas results to date at Pond 16S. During the 4Q12 soil gas monitoring, the Pond 16S soil gas PH3 concentrations, particularly at probes 5, 11 and 12 exhibited a temporal pattern that did not follow the north and east perimeter pipe concentrations as shown on Figure 4-8. The 4Q12 Pond 16S soil gas results follow a visually apparent increasing trend that appears to be independent of pre-monitoring event barometric pressure change.

Overall, the Pond 16S TMP PH3 concentration ranges measured during 4Q12 continued the increasing trend discussed in the *Assessment Study Report* and the *1Q12, 2Q12 and 3Q12 Update Tech Memos*. The 4Q12 Pond 16S perimeter pipe standpipes PH3 concentrations remained in the same range as 3Q12 which moderated the overall increasing trend in perimeter pipe concentrations. While the 4Q12 soil gas results were lower than the March 2012 maximums, the results through January 2013 show a visually apparent increasing trend during 4Q12 that is

consistent with the statistically significant increasing trend in the data from shallow soil gas probes 5, 11 and 12. During 4Q12, phosphine was not detected during the perimeter surface scans, appurtenance ambient air monitoring and breathing zone and ground level (4 to 6 inches AGS) readings during the soil gas monitoring events. These non-detect results indicate that the current PH3 concentrations beneath the Pond 16S cap have a low potential for PH3 release to ambient air at levels that could represent a potential threat to human health and the environment.

4.2 Pond 18A

The monitoring results prior to and during operation of the GES unit connected to east perimeter piping at Pond 18A are summarized in the *Assessment Study Report* and not repeated here. An update of the evaluation of Pond 18A post-GES operation PH3 monitoring data is presented below.

As shown on Figure 4-10 (Updated 4Q12), after GES operation was suspended on October 5, 2011, Pond 18A east perimeter pipe PH3 concentrations were in the range of 1,200 to 2,500 ppm during December 2011 and January 2012 and the PH3 concentration had increased steadily (approximately a 180% increase over the 1Q12 period) to about 5,100 ppm as of April 4, 2012. In the south standpipe, PH3 concentrations were in the range of 450 to 550 ppm during December 2011 and January 2012 and the PH3 concentration had increased moderately to 900 ppm as of April 4, 2012. The Pond 18A east and south perimeter pipe standpipe PH3 concentration trends moderated (flattened) over 2Q12 and 3Q12 and increased about 17 and 42 percent, respectively, from April to September 2012. During 4Q12, east perimeter pipe PH3 concentrations were in the range of 3,184 (December 2012) to 9,937 ppm (October 2012) and the south perimeter pipe PH3 concentrations were in the range of 691 (December 2012) to 2,122 ppm (October 2012). The east and south standpipe PH3 concentrations trends steepened with the October 2012 results, but the trends flattened based on the November 2012 through January 2013 results. The 4Q12 Pond 18A east and south perimeter pipe standpipe results did not appear to be influenced by changing barometric pressure; however, similar to the Pond 16S perimeter pipe monitoring, relatively stable barometric pressure conditions preceded the 4Q12 perimeter pipe monitoring events at Pond 18A. The spatial variability in the PH3 concentrations between the east and south standpipes (i.e., spatial variability) remained consistent through 4Q12.

The Pond 18A soil gas monitoring results are shown on Figures 4-10 and 4-12 (Updated 4Q12). Phosphine was detected in six of the ten shallow and five of the ten step-out soil gas probes during the 4Q12 monitoring events compared to seven of the ten shallow and four of the ten step-out soil gas probes during the 3Q12 monitoring events. The higher PH3 concentration in the east and south perimeter standpipes in October 2012 is also reflected in the higher shallow soil gas PH3 results for that monitoring event. As shown on Figure 4-12 (Updated 4Q12), the December 2012 PH3 results for shallow soil gas probes 2 and 4 were at new maximums compared to the March 6, 2012 prior maximum results for soil gas monitoring at Pond 18A. The

4Q12 soil gas monitoring results did not appear to be significantly influenced by changing barometric pressure given the relatively stable barometric pressure conditions preceded the 4Q12 soil gas monitoring events.

As described in Section 3, PH3 was detected (0.06 ppm and 0.16 ppm) during the November 8, 2012 perimeter surface scan monitoring at Pond 18A. The 0.06 ppm perimeter surface scan reading was located on the eastern most end of Pond 18A (between soil gas probes 5 and 6) where a maximum concentration of 0.06 ppm was detected immediately above the ground surface (1 to 2 inches above ground surface), but not at greater distance above the ground or in the breathing zone. The 0.16 ppm perimeter surface scan reading was located on the northern side of Pond 18A, between soil gas probes SG-4 and SG-5. The investigation identified an area approximately 6 feet wide by 40 feet long where a maximum concentration of 0.21 ppm was detected at 1 to 2 inches above ground surface, but not at greater distance above the ground or in the breathing zone. The full cap surface scan identified only one location in Cell #2 near soil gas probe 4 with a reading of 0.02 ppm at 1 to 2 inches above ground surface, but not at greater distance above the ground or in the breathing zone.

As shown on Figure 4-6g, the barometric pressure data for the days prior to the surface scan showed a steady and strong falling barometric pressure. The barometric pressure fell about 0.61 inches of mercury over the 48 hours (from 1000 hours on November 6 to 1000 hours on November 8) prior to the Pond 18A perimeter surface scan monitoring event. The strongly falling pressure was related to a series of storms that produced snow on November 9 through 11. The barometric pressure remained low on November 9 and then climbed about 0.6 inches of mercury over November 10 and 11 (succeeding 48 hours). The snow cover at Pond 18A did not melt sufficiently to re-monitor the area until November 14, 2012. The re-monitoring perimeter surface scan was conducted at Pond 18A on November 14, 2012 and all readings were 0.00 ppm.

A review of the 2012 barometric pressure (BP) data from the meteorological (“met”) station located near the northwest corner of the RCRA pond area was conducted to evaluate the relative magnitude of the barometric pressure drop observed prior to the November 8, 2012 Pond 18A perimeter surface scan monitoring. The 2012 BP data was reviewed to identify time periods of an essentially continuous drop in barometric pressure of 0.6 inches of mercury or greater (i.e., BP drops of the magnitude and duration as was observed from November 6 to 8, 2012).

The 2012 BP data evaluation is summarized on Figure 4-13. In addition to graphing all of the 2012 BP data, the monthly average and average plus / minus 0.3 inches of mercury is plotted to allow a visual “envelop” representing 0.6 inches mercury BP. There were eight (8) time periods when the BP dropped 0.6 inches mercury or more that occurred within a time period of 20 to 96 hours from the preceding high BP to the lowest BP. The November 6 to 8 BP drop was tied as the second greatest total BP drop (0.73 inches mercury) and the greatest drop (0.82 inches mercury) occurred from March 4 to 6. As initially reported in the *1Q12 Update Tech Memo*, the

March 2012 Pond 16S soil gas monitoring was performed on March 6 at essentially the bottom of the BP drop that started on March 4, and those soil gas monitoring results still represent the maximum soil gas results to date at Pond 16S. As shown on Figure 4-13, the high amplitude BP drops are typically reversed rapidly, within 24 hours, with strong increases in BP that are similar in magnitude to the preceding drop.

The PH₃ detections during the Pond 18A perimeter surface scan and cap surface scan monitoring on November 8, 2012 occurred during a low pressure system and accompanying drop in BP that is relatively infrequent (for the magnitude of the BP drop) and short in duration. The maximum PH₃ detection during the November 8 perimeter surface scan and follow-up investigation monitoring was 0.21 ppm at 1 to 2 inches above ground surface at the identified source area but PH₃ was not detected higher above the ground or in the breathing zone. Considering the PH₃ concentration detected at ground level was below the OSHA 8-hour TWA PEL of 0.3 ppm and no PH₃ was detected in the breathing zone, the PH₃ detected during this strong low pressure event did not represent a threat to workers at Pond 18A or other personnel within the RCRA pond area. Phosphine was not detected during the Pond 18A perimeter surface scans performed on October 9, November 14 (re-monitoring after November 8 event) and December 3, 2012 under typical meteorological conditions. The overall 4Q12 monitoring results indicate that the current PH₃ concentrations beneath the Pond 18A cap have a low potential for PH₃ release to ambient air at levels that could represent a potential threat to human health and the environment.

5.0 UPDATED FINDINGS AND RECOMMENDATIONS FOR 16S AND 18A

The Assessment Study and additional monitoring through 4Q12 meet the first UAO Task 1A objective with respect to Pond 16S. As expected and confirmed by data evaluation, PH₃ concentrations in TMPs, perimeter pipe and shallow soil gas (through 4Q12) at Pond 16S are increasing. As described in the Phosphine Assessment Study Work Plan (“*Work Plan*”), the intent of the study is to establish a relationship between data such as the range of PH₃ concentrations in perimeter piping, in perimeter soil gas, and at the ground surface around the pond perimeter and appurtenances to develop a trigger(s) for additional (more frequent) monitoring and/or gas extraction.

Figure 5-1a (Updated 4Q12) is a graph of the Pond 16S average TMP, north perimeter pipe and soil gas probe 11 that illustrates the relationship between PH₃ concentrations at these monitoring points over the study period. The perimeter pipe concentration greater than 2,000 ppm that was found during the April 3, 2012 monitoring at the north standpipe triggered increased frequency (monthly) for surface scan and appurtenance monitoring (pursuant to provisions of the Air Monitoring Plan), as shown on Figure 5-1a and Table 5.1 (Updated 4Q12). Figure 5-1a also shows a Microsoft Excel generated best-fit regression through the data. As described above, the coefficient of prediction (R^2) for an exponential regression on the average TMP concentration is very high (0.96). As shown on Figure 5-1a, an exponential regression through the north

standpipe results from week 12 (February 22, 2011) to January 8, 2013 yields a reasonably good R^2 of 0.80. As shown on Figure 5-1b, an exponential regression through the north standpipe results from week 50 (November 8, 2011) to January 8, 2013 yields slightly lower R^2 of 0.76. Both of the regressions suggest that the Pond 16S north perimeter pipe concentration will increase to a range from 8,000 to 10,000 ppm during 1Q13 despite the lower than predicted January 2013 result of 5,038 ppm.

Potentially due to barometric pressure trend influences, the best-fit regression on the soil gas probe 11 data from week 41 (September 6, 2011 – prior detections were less than 0.1 ppm) to January 8, 2013 is a second order polynomial that indicates a decreasing trend and has a very poor R^2 of 0.01 as shown on Figure 5-1a. Specific Comment 7 of the *EPA Draft Comments* stated that seasonal variation could account in part for the poor R^2 for shallow soil gas probe 2 at Pond 18A. In response to this comment with respect to Pond 16S, the February 7 and March 6, 2012 soil gas results for probe 11 were removed from the data set for the purpose of regression analysis. As shown on Figure 5-1b, the best-fit regression on the soil gas probe 11 data from week 41 (September 6, 2011 – prior detections were less than 0.1 ppm) to January 8, 2013 is a second order polynomial with a better R^2 of 0.58 and indicates an increasing trend during 4Q12 that is consistent with the results of the Mann-Kendall test for trend for probes 5, 11 and 12 soil gas results.

Because the surface scans to date at Pond 16S have not detected PH₃, Figure 5-1a does not show any surface scan results. Phosphine was and is expected to be detected eventually during surface scans as was assumed on Figure 5-1 in the *Work Plan*. As such, the Pond 16S data cannot fully meet the second objective. However, continuation of the monitoring program will yield additional data that may meet the second study objective with respect to Pond 16S during 2013.

The Assessment Study and monitoring through 4Q12 meet the first objective with respect to Pond 18A. As described above, Pond 18A east and, to a lesser degree, south perimeter pipe standpipe PH₃ concentrations measured during 3Q12 show an increasing trend that began in December 2011. As shown on Figures 5.2 (Updated 4Q12), the exponential regression using Microsoft Excel that provides the best fit for the east perimeter pipe data yields a fair coefficient of prediction (R^2) of 0.62 compared to the relatively good coefficient of prediction (R^2) of 0.81 presented in the 3Q12 Update Tech Memo for the data through October 2012. The decrease in R^2 (increased residual error) is due to the significant difference between the October (9,937 ppm) and December (3,184 ppm) perimeter pipe monitoring results. The regression on the data through 4Q12 reflects the flattening of the increasing trend at the Pond 18A east perimeter pipe PH₃ concentrations during 4Q12.

As shown on Figure 5-2 (Updated 4Q12), the best-fit regression on the results from shallow soil gas probe 2 from November 22, 2011 to January 7, 2013 is a second order polynomial and has a very poor R^2 of 0.18. Specific Comment 7 of the *EPA Draft Comments* stated that seasonal

variation could account in part for the poor R^2 for shallow soil gas probe 2 at Pond 18A. In response to this comment, the March 6, 2012 soil gas result for probe 2 was removed from the data set for the purpose of regression analysis. The best-fit regression on the soil gas probe 2 data remains a second order polynomial with a slightly better R^2 of 0.35. Thus, as indicated by the dashed line for the soil gas probe 2 regression, any prediction regarding future soil gas monitoring results would be highly speculative.

Figure 5-3 shows the decreasing PH₃ concentration by month during continuous GES operation at the east standpipe. For example, during GES operation, the June 2011 average (shown as June 30) was about 19,000 ppm PH₃, after one month of GES operation the July 2011 average (shown as July 31) was about 15,500 ppm PH₃. Based on previous GES operation at Pond 18A, if the east perimeter pipe concentration increased to about 15,500 ppm, two months of continuous GES operation would decrease the average PH₃ concentration to below 8,000 ppm (and probably below 4,000 based on post-GES operation decrease from October 5 to November 8 monitoring results). Figure 5-3 (Updated 4Q12) has been updated with the east and south perimeter standpipe results through January 7, 2013.

The current monitoring program for the RCRA Ponds is summarized on Table 5.1 (Updated 4Q12). In addition to monthly reporting and review of the results from the extension of the Assessment Study monitoring, FMC will continue to evaluate the monitoring results and, in particular, the Pond 16S north perimeter standpipe and Pond 18A east perimeter standpipe PH₃ concentrations and trends as these approach the 14,000 ppm perimeter pipe concentration trigger for gas extraction and treatment described in the FMC response to *EPA Draft Comments*. Based on the current perimeter pipe concentration trends at Ponds 16S and 18A, the trigger concentration could be reached in either or both ponds during the next three to six months.

FMC will evaluate the monitoring results and status of these ponds at the end of 1Q13 and recommend either (1) prepare a 1Q13 Update Tech Memo or (2) proceed with preparation of the Final Update to the RCRA Pond Phosphine Assessment Study that will function as the final RCRA Pond Phosphine Assessment Study Report. If recommended, the 1Q13 update will include updated tabulated data, graphical evaluations and, potentially, recommendation(s) for further modification of the monitoring program and/or recommendation(s) for commencing gas extraction and treatment at Pond 16S and/or 18A. If FMC proceeds with preparation of the Final Update to the RCRA Pond Phosphine Assessment Study, the Final Update will include tabulated data, graphical presentation and evaluations of the cumulative monitoring data as well as the relevant FMC responses to *EPA Draft Comments* related to the Phosphine Assessment Study/Report.

REFERENCES

- EPA, 2010. "RCRA Pond Unilateral Administrative Order for Removal Actions," EPA Region 10, June 2010.
- EPA, 2012. EPA Draft Comments on FMC's July 16, 2012, *Framework for Post-Closure Phosphine Monitoring RCRA Ponds, FMC Facility, Pocatello, ID*. Emailed to FMC on September 07, 2012.
- MWH, 2011. "RCRA Pond UAO – SOW Task 1 – Air Monitoring Plan – Part I and Part II." January 2011.
- MWH, 2011b. "RCRA Pond Phosphine Assessment Study Work Plan - Final." November 2010, Revised July 2011.
- MWH, 2012. "RCRA Pond Phosphine Assessment Study Report." January 2012.
- MWH, 2012b. "Technical Memorandum - First Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study." April 11, 2012.
- MWH, 2012c. "Technical Memorandum - Second Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study." July 16, 2012.
- MWH, 2012d. "Framework for Post-Closure Phosphine Monitoring, RCRA Ponds, FMC Facility, Pocatello, ID." July 16, 2012.
- MWH, 2012e. "Technical Memorandum - Third Quarter 2012 Update for Ponds 16S and 18A - RCRA Pond Phosphine Assessment Study." October 16, 2012.

Table 3.3b Ponds 16S and 18A Perimeter Surface Scan Monitoring Results Summary (Updated 4Q12)

Date	Pond 16S		Pond 18A		Comment
	Breathing zone	Breathing zone	Breathing zone	Detection	
July/August - 10	NS		0.00	No	
October-10	0.00	No	0.00	No	
November-10	NS		0.00	No	
December-10	NS		0.00	No	
January-11	NS		NW		18A was snow covered for the month.
February-11	0.00	No	0.00	No	
March-11	NS		0.00	No	
April-11	NS		0.00	No	
May-11	0.00	No	0.00	No	
June-11	NS		0.00	No	
July-11	NS		0.00	No	
August-11	0.00	No	0.00	No	
September-11	NS		0.00	No	
October-11	NS		0.00	No	Pond 18A enhance monitoring (10/10/11).
			0.00	No	Pond 18A enhance monitoring (10/25/11).
November-11	NS		0.00	No	Pond 18A (11/8/11).
			0.00	No	Pond 18A (11/21/11).
December-11	NS		NW		18A was snow covered for the month.
January-12	NS		0.00	No	
February-12	NS		NS		
March-12	0.00	No	0.00	No	Ponds 16S and 18A (3/21/12).
April-12	0.00	No	NS		Ponds 16S (4/4/12).
May-12	0.00	No	0.00	No	Pond 16S (5/7/12) and Pond 18A (5/8/12).
June-12	0.00	No	0.00	No	Pond 18A (6/7/12) and Pond 16S (6/11/12).
July-12	0.00	No	0.00	No	Pond 18A (7/5/12) and Pond 16S (7/9/12).
August-12	0.00	No	0.00	No	Pond 16S and 18A (8/6/12).
September-12	0.00	No	0.00	No	Pond 16S and 18A (9/17/12).
October-12	0.00	No	0.00	No	Pond 16S and 18A (10/9/12).
November-12	0.00	No	0.00	Yes	Pond 16S (11/6/12) and 18A (11/8/12). Pond 18A perimeter surface scan detected PH3 > 0.05ppm at 2 locations, performed low lying area investigation and full surface scan on 18A, no detection above 0.05 ppm found. Performed 18A perimeter surface re-monitoring on 11/14/12 and there were no PH3 detections.
December-12	0.00	No	0.00	NO	Pond 18A (12/3/12) and Pond 16S on (12/11/12).
January-13	-	-	-	-	Ponds 16S and 18A snow covered 1/1 to at least 1/11/13.

Notes

NS = not surveyed per monitoring schedule in Air Monitoring Plan.

NW = not completed due to weather / snow cover conditions.

Table 3.9b Ponds 16S and 18A Perimeter Pipe Monitoring Results Summary (Updated 4Q12)

Month	Pond 16S												Pond 18 Cell A					
	West Standpipe			South Standpipe			East Standpipe			North Standpipe			South Standpipe			East Standpipe		
	Date	BZ	Source	Date	BZ	Source	Date	BZ	Source	Date	BZ	Source	Date	BZ	Source	Date	BZ	Source
July/August-10	-	-	-	-	-	-	-	-	-	-	-	-	7/22	0.00	7,123	-	-	-
October-10	-	-	-	10/21	0.00	0.00	-	-	-	-	-	-	-	-	NS	-	-	-
November-10	-	-	-	11/30	0.00	0.00	-	-	-	-	-	-	-	-	NS	-	-	-
December-10	-	-	-	12/16	0.00	0.00	-	-	-	-	-	-	12/15	0.00	3,464	-	-	-
January-11	-	-	-	1/13	0.00	34	-	-	-	-	-	-	1/20	0.00	3,467	1/17	0.00	19,155
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1/20	0.00	17,880
February-11	2/15	0.00	43	2/2	0.00	0.99	2/23	0.00	1.07	2/23	0.00	241	2/22	0.00	3,798	2/22	0.00	19,625
March-11	3/2	0.00	3.58	3/2	0.00	28	3/2	0.00	14	3/2	0.00	202	3/3	0.00	2,833	-	-	-
	3/17	0.00	2.07	3/17	0.00	8.78	3/17	0.00	3.12	3/16	0.00	335	3/17	0.00	3,511	-	-	15,187
April-11	4/12	0.00	0.46	4/11	0.00	21	4/11	0.00	34	4/12	0.00	269	4/12	0.00	7,187	-	-	-
	4/27	0.00	0.26	4/26	0.00	15	4/26	0.00	37	4/27	0.00	165	4/26	0.00	4,327	-	-	18,637
May-11	5/11	0.00	0.00	5/11	0.00	0.21	5/11	0.00	60	5/11	0.00	284	5/12	0.00	2,772	-	-	-
	5/24	0.00	1.90	5/23	0.00	459	5/24	0.00	138	5/24	0.00	523	5/25	0.00	3,453	-	-	19,270
June-11	6/6	0.00	117	6/7	0.00	92	6/6	0.00	229	6/6	0.00	770	6/7	0.00	3,740	-	-	-
	6/21	0.00	0.07	6/20	0.00	8.34	6/20	0.00	138	6/20	0.00	610	6/21	0.00	4,043	-	-	18,956
July-11	7/6	0.00	0.08	7/5	0.00	11	7/5	0.00	125	7/5	0.00	383	7/6	0.00	2,892	-	-	-
	7/26	0.00	8.08	7/25	0.00	204	7/25	0.00	289	7/25	0.00	623	7/26	0.00	4,182	-	-	15,410
August-11	8/8	0.00	0.74	8/8	0.00	52	8/8	0.00	470	8/8	0.00	1,382	8/9	0.00	2,798	-	-	-
	8/22	0.00	0.06	8/23	0.00	76	8/22	0.00	231	8/22	0.00	983	8/23	0.00	2,716	-	-	11,801
September-11	9/6	0.00	0.04	9/7	0.00	0.06	9/6	0.00	160	9/6	0.00	362	9/7	0.00	2,168	-	-	-
	9/19	0.00	0.43	9/19	0.00	173	9/19	0.00	199	9/19	0.00	476	9/19	0.00	1,579	-	-	8,253
October-11	10/3	0.00	0.34	10/4	0.00	658	10/3	0.00	668	10/3	0.00	1,297	10/4	0.00	1,780	10/10	0.00	3,505
	10/24	0.00	51	10/25	0.00	2.41	10/24	0.00	593	10/24	0.00	825	-	-	-	10/25	0.00	1,707
November-11	11/7	0.00	0.07	11/8	0.00	0.03	11/7	0.00	161	11/7	0.00	369	-	-	-	11/8	0.00	1,136
	11/21	0.00	0.03	11/21	0.00	1.65	11/21	0.00	219	11/21	0.00	453	11/22	0.00	309	11/22	0.00	1,137
December-11	12/6	0.00	0.07	12/5	0.00	20	12/5	0.00	249	12/5	0.00	281	12/6	0.00	461	12/6	0.00	1,240
	12/19	0.00	33	12/19	0.00	50	12/19	0.00	503	12/19	0.00	915	12/20	0.00	548	12/20	0.00	2,503
January-12	1/4	0.00	2.96	1/4	0.00	21	1/4	0.00	291	1/3	0.00	718	1/3	0.00	515	1/3	0.00	1,795
February-12	2/9	0.00	0.16	2/9	0.00	5	2/8	0.00	500	2/8	0.00	1,186	2/6	0.00	663	2/8	0.00	2,090
March-12	3/5	0.00	238	3/5	0.00	737	3/5	0.00	1,319	3/5	0.00	1,732	3/6	0.00	807	3/6	0.00	3,491
	3/21	0.00	5	3/21	0.00	15	3/21	0.00	1,264	3/21	0.00	1,996	3/22	0.00	900	3/22	0.00	3,788
April-12	4/3	0.00	15.67	4/3	0.00	98	4/3	0.00	1,458	4/3	0.00	3,319	4/4	0.00	880	4/4	0.00	5,094
May-12	5/7	0.00	21	5/7	0.00	12	5/7	0.00	1,464	5/7	0.00	3,672	5/8	0.00	874	5/8	0.00	3,747
June-12	6/11	0.00	0.67	6/11	0.00	22	6/11	0.00	886	6/11	0.00	2,166	6/5	0.00	1,354	6/5	0.00	4,338
July-12	7/9	0.00	8.12	7/9	0.00	70	7/9	0.00	2,057	7/9	0.00	5,214	7/5	0.00	981	7/5	0.00	3,386
August-12	8/2	0.00	18.00	8/2	0.00	134	8/2	0.00	3,540	8/2	0.00	6,729	8/2	0.00	1,253	8/2	0.00	5,717
September-12	9/17	0.00	43	9/17	0.00	160	9/17	0.00	1,948	9/17	0.00	3,922	9/18	0.00	1,248	9/18	0.00	5,968
October-12	10/9	0.00	104	10/9	0.00	309	10/9	0.00	2,291	10/9	0.00	4,576	10/8	0.00	2,122	10/8	0.00	9,937
November-12	11/6	0.00	76	11/6	0.00	67	11/6	0.00	2,540	11/6	0.00	5,915	11/5	0.00	1,205	11/5	0.00	5,571
December-12	12/4	0.00	1.00	12/4	0.00	39	12/4	0.00	1,507	12/4	0.00	3,763	12/3	0.00	691	12/3	0.00	3,184
January-13	1/8	0.00	57	1/8	0.00	279	1/8	0.00	2,758	1/8	0.00	5,038	1/7	0.00	1,465	1/7	0.00	6,128

Notes:

Pond Perimeter Collection Pipe Breathing Zone (BZ) and Source Concentration.

Pond 18A east standpipe concentrations are average concentration from GES units for March through September 2011.

Table 3.10 Pond 16S Appurtenance Monitoring Results Summary (Updated 4Q12)

TMP Enclosure														
Date	T-01							T-02						
	Ambient Air		Leak Detection				Inside	Ambient Air		Leak Detection				Inside
	Ambient	BZ	Base	Lid	PO	PP		Ambient	BZ	Base	Lid	PO	PP	
July-10	NS	NS	NS	NS	-	-	-	NS	NS	NS	NS	-	-	-
10/26/10	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
2/8/11	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
5/17/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
10/9/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TMP Enclosure														
Date	T-03							T-04						
	Ambient Air		Leak Detection				Inside	Ambient Air		Leak Detection				Inside
	Ambient	BZ	Base	Lid	PO	PP		Ambient	BZ	Base	Lid	PO	PP	
July-10	NS	NS	NS	NS	-	-	-	NS	NS	NS	NS	-	-	-
10/26/10	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
2/8/11	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
5/17/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
10/9/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	2.62
10/12/12	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	-	0.00
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.46	0.00	17
11/7/12	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Flange loose at T-04
Re-check after maintenance
Flange loose/seal gasket T-04
Re-check after maintenance

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Pipe Opening [PO], Pipe Ports [PP], Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan)

Table 3.10 Pond 16S Appurtenance Monitoring Results Summary (Updated 4Q12)

TMP Enclosure														
Date	T-05							T-06						
	Ambient Air		Leak Detection				Inside	Ambient Air		Leak Detection				Inside
	Ambient	BZ	Base	Lid	PO	PP		Ambient	BZ	Base	Lid	PO	PP	
July-10	NS	NS	NS	NS	-	-	-	NS	NS	NS	NS	-	-	-
10/26/10	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
2/8/11	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
5/17/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.03
10/9/12	0.00	0.00	0.02	0.00	0.00	-	0.30	0.00	0.00	0.00	0.00	0.00	-	0.00
10/12/12	0.00	0.00	0.00	0.00	0.00	-	0.00	-	-	-	-	-	-	-
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
11/7/12	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Flange loose at T-05
Re-check after maintenance
Flange loose at T-06
Re-check after maintenance

TMP Enclosure														
Date	T-07							T-08						
	Ambient Air		Leak Detection				Inside	Ambient Air		Leak Detection				Inside
	Ambient	BZ	Base	Lid	PO	PP		Ambient	BZ	Base	Lid	PO	PP	
July-10	NS	NS	NS	NS	-	-	-	NS	NS	NS	NS	-	-	-
10/26/10	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
2/8/11	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	-	-
5/17/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00
10/9/12	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-	0.33
10/12/12	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	-	0.00
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Flange loose at T-08
Re-check after maintenance

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Pipe Opening [PO], Pipe Ports [PP], Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan)

Table 3.10 Pond 16S Appurtenance Monitoring Results Summary (Updated 4Q12)

Date	LCDRS Sump 1 (east)					LCDRS Sump 2 (west)				
	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside
	Ambient	BZ	Base	Lid		Ambient	BZ	Base	Lid	
July-10	NS	NS	NS	NS	-	NS	NS	NS	NS	-
10/26/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
2/8/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
5/17/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
4/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
7/10/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
7/10/12										0.43
8/3/12	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.05
10/9/12	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
11/6/12	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rechecked inside on afternoon of 7/10/12.

Cap Drainage Lift Station														
Date	LS-01							LS-02						
	Ambient Air		Leak Detection				Inside	Ambient Air		Leak Detection				Inside
	Ambient	BZ	Base	Lid	VP	OF		Ambient	BZ	Base	Lid	VP	OF	
July-10	NS	NS	NS	NS	NS	NS	-	NS	NS	NS	NS	NS	NS	-
10/26/10	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
2/8/11	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
5/17/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.06
4/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.04
5/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
10/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.06
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Pipe Opening [PO], Pipe Ports [PP], Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan)

Table 3.10 Pond 16S Appurtenance Monitoring Results Summary (Updated 4Q12)

Instrumentation Panel															
Date	Temperature & Pressure					LS-01					LS-02				
	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside
	Ambinet	BZ	Door	Conduit		Ambinet	BZ	Door	Conduit		Ambinet	BZ	Door	Conduit	
July-10	NS	NS	NS	NS	-	NS	NS	NS	NS	-	NS	NS	NS	NS	-
10/26/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
2/8/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
5/17/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Instrumentation Panel										
Date	LCDRS-01					LCDRS-02				
	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside
	Ambinet	BZ	Door	Conduit		Ambinet	BZ	Door	Conduit	
July-10	NS	NS	NS	NS	-	NS	NS	NS	NS	-
10/26/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
2/8/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
5/17/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Pipe Opening [PO], Pipe Ports [PP], Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan)

Table 3.10 Pond 16S Appurtenance Monitoring Results Summary (Updated 4Q12)

Perimeter Gas Collection Pipe Riser or Pressure monitor																	
	North				East					South				West			
	Ambient Air		Leak Detection		Ambient Air		Leak Detection			Ambient Air		Leak Detection		Ambient Air		Leak Detection	
Date	Ambient	BZ	Base	Outlet	Ambient	BZ	Base	Outlet	TJ	Ambient	BZ	Base	Outlet	Ambient	BZ	Base	Outlet
July-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/26/10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/8/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/17/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/11/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/10/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/6/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/8/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Pipe Opening [PO], Pipe Ports [PP], Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan)

Table 3.11 Pond 16S Soil Gas Monitoring Results Summary (Updated 4Q12)

Location	Probe # 1		Probe # 2		Probe # 3		Probe # 4		Probe # 5		Probe # 6		Probe # 7	
Date	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG
12/28/2010	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.28	0.00/0.00	0.00	0.00/0.00	0.00
1/13/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
2/2/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
3/2/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.63	0.00/0.00	0.00	0.00/0.00	0.00
4/11/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.02
5/12/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
6/7 & 6/8/2011	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	1.08	0.00/0.00	0.03	0.00/0.00	0.02
7/6/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00
8/9/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.55	0.00/0.00	0.00	0.00/0.00	0.00
9/7/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.06
10/5/2011	0.00/0.00	0.23	0.00/0.00	0.03	0.00/0.00	0.03	0.00/0.00	0.07	0.00/0.00	2.02	0.00/0.00	0.06	0.00/0.00	0.00
11/8/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/8/2011	0.00/0.00	0.02	0.00/0.00	0.03	0.00/0.00	0.02	0.00/0.00	0.02	0.00/0.00	0.42	0.00/0.00	0.02	0.00/0.00	0.01
1/4/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.88	0.00/0.00	0.13	0.00/0.00	0.02
2/7/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.03	0.00/0.00	0.02	0.00/0.00	4.60	0.00/0.00	0.07	0.00/0.00	0.06
3/6/2012	0.00/0.00	7.95	0.00/0.00	0.05	0.00/0.00	17.00	0.00/0.00	4.89	0.00/0.00	28	0.00/0.00	24	0.00/0.00	6.70
3/21/2012	0.00/0.00	0.03	0.00/0.00	0.01	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.11	0.00/0.00	0.12	0.00/0.00	0.03
4/3/2012	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.10	0.00/0.00	0.01	0.00/0.00	0.49	0.00/0.00	4.94	0.00/0.00	0.13
5/7/2012	0.00/0.00	0.03	0.00/0.00	0.03	0.00/0.00	0.03	0.00/0.00	0.02	0.00/0.00	0.08	0.00/0.00	0.04	0.00/0.00	0.03
6/11/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00
7/9/2012	0.00/0.00	0.03	0.00/0.00	0.04	0.00/0.00	0.05	0.00/0.00	0.05	0.00/0.00	6.27	0.00/0.00	0.04	0.00/0.00	0.03
8/8/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	2.53	0.00/0.00	0.21	0.00/0.00	0.81
9/17/2012	0.00/0.00	0.10	0.00/0.00	0.02	0.00/0.00	0.07	0.00/0.00	0.00	0.00/0.00	3.60	0.00/0.00	5.27	0.00/0.00	0.35
10/9/2012	0.00/0.00	0.27	0.00/0.00	0.01	0.00/0.00	1.08	0.00/0.00	0.10	0.00/0.00	4.86	0.00/0.00	3.85	0.00/0.00	0.02
11/6/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	1.64	0.00/0.00	0.02	0.00/0.00	0.00
12/4/2012	0.00/0.00	0.23	0.00/0.00	1.10	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/8/2013	0.00/0.00	0.55	0.00/0.00	0.16	0.00/0.00	3.49	0.00/0.00	0.05	0.00/0.00	9.50	0.00/0.00	0.03	0.00/0.00	0.05

Breathing Zone [BZ], 4-6" Above Ground Surface [AGS], and Average Soil Gas [SG] readings in ppm.

Table 3.11 Pond 16S Soil Gas Monitoring Results Summary (Updated 4Q12)

Location	Probe # 8		Probe # 9		Probe # 10		Probe # 11		Probe # 12		Probe # 13		Probe # 14	
Date	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG
12/28/2010	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/13/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
2/2/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
3/2/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.10	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
4/11/2011	0.00/0.00	0.01	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.02	0.00/0.00	0.02	0.00/0.00	0.00
5/12/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
6/7 & 6/8/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
7/6/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
8/9/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.05	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
9/7/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
10/5/2011	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.43	0.00/0.00	8.12	0.00/0.00	0.91	0.00/0.00	0.06	0.00/0.00	0.00
11/8/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/8/2011	0.00/0.00	0.01	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	1.51	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00
1/4/2012	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.18	0.00/0.00	3.07	0.00/0.00	1.13	0.00/0.00	0.00	0.00/0.00	0.00
2/7/2012	0.00/0.00	0.04	0.00/0.00	0.04	0.00/0.00	0.55	0.00/0.00	45	0.00/0.00	0.75	0.00/0.00	0.04	0.00/0.00	0.00
3/6/2012	0.00/0.00	1.38	0.00/0.00	33	0.00/0.00	21	0.00/0.00	439	0.00/0.00	53	0.00/0.00	11.10	0.00/0.00	2.51
3/21/2012	0.00/0.00	0.04	0.00/0.00	0.05	0.00/0.00	1.04	0.00/0.00	3.01	0.00/0.00	13.63	0.00/0.00	0.08	0.00/0.00	0.04
4/3/2012	0.00/0.00	0.04	0.00/0.00	0.10	0.00/0.00	2.33	0.00/0.00	4.49	0.00/0.00	24	0.00/0.00	0.05	0.00/0.00	0.01
5/7/2012	0.00/0.00	0.03	0.00/0.00	0.06	0.00/0.00	0.05	0.00/0.00	0.19	0.00/0.00	0.03	0.00/0.00	0.01	0.00/0.00	0.01
6/11/2012	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.05	0.00/0.00	0.09	0.00/0.00	0.00	0.00/0.00	0.00
7/9/2012	0.00/0.00	0.04	0.00/0.00	0.03	0.00/0.00	0.03	0.00/0.00	1.50	0.00/0.00	0.01	0.00/0.00	0.02	0.00/0.00	0.02
8/8/2012	0.00/0.00	0.26	0.00/0.00	1.15	0.00/0.00	0.03	0.00/0.00	4.72	0.00/0.00	0.08	0.00/0.00	0.01	0.00/0.00	0.00
9/17/2012	0.00/0.00	0.04	0.00/0.00	0.13	0.00/0.00	0.63	0.00/0.00	11.97	0.00/0.00	2.89	0.00/0.00	0.00	0.00/0.00	0.00
10/9/2012	0.00/0.00	0.04	0.00/0.00	1.10	0.00/0.00	7.25	0.00/0.00	85	0.00/0.00	16.70	0.00/0.00	0.14	0.00/0.00	0.00
11/6/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	4.69	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/4/2012	0.00/0.00	0.00	0.00/0.00	1.04	0.00/0.00	25	0.00/0.00	39	0.00/0.00	135	0.00/0.00	1.70	0.00/0.00	0.04
1/8/2013	0.00/0.00	0.10	0.00/0.00	10.12	0.00/0.00	5.97	0.00/0.00	92	0.00/0.00	68	0.00/0.00	0.17	0.00/0.00	0.03

Breathing Zone [BZ], 4-6" Above Ground Surface [AGS], and Average Soil Gas [SG] readings in ppm.

Table 3.12 Pond 16S TMP Monitoring Results Summary (Updated 4Q12)

	TMP 01		TMP 02		TMP 03		TMP 04		TMP 05		TMP 06		TMP 07		TMP 08		Pond
Date	BZ	Source	BZ	Source	BZ	Source	BZ	Source	BZ	Source	BZ	Source	BZ	Source	BZ	Source	Average
11/10/10	-	535	-	379	-	273	-	316	-	533	-	445	-	375	-	567	428
12/16/10	0.00	1,091	0.00	875	0.00	467	0.00	1,400	0.00	280	0.00	490	0.00	897	0.00	580	760
01/13/11	0.00	1,195	0.00	1,282	0.00	431	0.00	842	0.00	232	0.00	476	0.00	396	0.00	966	728
02/02/11	0.00	1,619	0.00	1,174	0.00	460	0.00	1,005	0.00	887	0.00	558	0.00	507	0.00	1,040	906
03/02/11	0.00	1,960	0.00	1,350	0.00	517	0.00	982	0.00	1,246	0.00	713	0.00	685	0.00	1,021	1,059
04/11/11	0.00	1,703	0.00	827	0.00	457	0.00	835	0.00	2,383	0.00	1,227	0.00	2,068	0.00	1,476	1,372
05/11/11	0.00	2,296	0.00	905	0.00	366	0.00	655	0.00	3,222	0.00	2,390	0.00	2,037	0.00	1,440	1,664
06/08/11	0.00	3,210	0.00	974	0.00	279	0.00	740	0.00	3,187	0.00	3,180	0.00	1,978	0.00	1,417	1,871
07/06/11	0.00	3,932	0.00	1,026	0.00	399	0.00	690	0.00	3,918	0.00	4,255	0.00	2,350	0.00	1,744	2,289
08/09/11	0.00	4,774	0.00	1,280	0.00	488	0.00	897	0.00	6,053	0.00	5,122	0.00	3,477	0.00	2,064	3,019
09/07/11	0.00	6,048	0.00	1,202	0.00	269	0.00	1,003	0.00	6,653	0.00	6,083	0.00	3,644	0.00	2,511	3,427
10/05/11	0.00	7,329	0.00	1,662	0.00	527	0.00	1,386	0.00	6,478	0.00	5,525	0.00	3,462	0.00	2,907	3,660
11/09/11	0.00	7,707	0.00	1,624	0.00	667	0.00	1,429	0.00	7,455	0.00	6,494	0.00	4,414	0.00	4,454	4,281
12/7 & 12/8/2011	0.00	9,112	0.00	1,772	0.00	678	0.00	1,249	0.00	9,154	0.00	8,774	0.00	5,775	0.00	5,389	5,238
01/04/12	0.00	13,658	0.00	2,307	0.00	1,186	0.00	2,124	0.00	15,530	0.00	10,343	0.00	6,233	0.00	6,159	7,193
02/07/12	0.00	15,526	0.00	3,471	0.00	1,745	0.00	2,721	0.00	24,260	0.00	17,459	0.00	11,324	0.00	10,095	10,825
03/07/12	0.00	19,567	0.00	4,271	0.00	2,845	0.00	3,504	0.00	26,940	0.00	22,338	0.00	12,035	0.00	11,619	12,890
04/06/12	0.00	20,078	0.00	5,121	0.00	3,041	0.00	4,596	0.00	23,528	0.00	21,169	0.00	13,320	0.00	12,819	12,959
05/08/12	0.00	23,737	0.00	6,443	0.00	4,017	0.00	5,398	0.00	31,920	0.00	23,968	0.00	15,255	0.00	12,158	15,362
06/11/12	0.00	25,363	0.00	7,628	0.00	4,684	0.00	5,024	0.00	36,390	0.00	27,690	0.00	18,342	0.00	14,603	17,466
07/09/12	0.00	26,137	0.00	8,391	0.00	5,063	0.00	5,418	0.00	41,415	0.00	27,953	0.00	17,329	0.00	15,400	18,388
08/01/12	0.00	39,218	0.00	13,632	0.00	6,206	0.00	5,637	0.00	40,842	0.00	28,939	0.00	17,735	0.00	14,781	20,874
09/17/12	0.00	38,727	0.00	13,416	0.00	5,806	0.00	5,299	0.00	46,675	0.00	32,586	0.00	20,424	0.00	14,422	22,169
10/09/12	0.00	36,951	0.00	14,470	0.00	5,985	0.00	3,742	0.00	48,772	0.00	33,116	0.00	20,285	0.00	15,826	22,393
11/06/12	0.00	37,894	0.00	13,516	0.00	5,240	0.00	4,808	0.00	51,742	0.00	32,520	0.00	18,483	0.00	15,622	22,478
12/04/12	0.00	28,228	0.00	14,878	0.00	6,121	0.00	4,152	0.00	46,858	0.00	31,387	0.00	16,594	0.00	15,347	20,446
01/08/13	0.00	29,884	0.00	19,844	0.00	7,525	0.00	5,664	0.00	52,449	0.00	31,593	0.00	17,553	0.00	17,387	22,737

Notes:

November 10, 2011 results measured during Pond 16S GETS operation, all other results using GETS for TMP monitoring per Assessment Study Work Plan.

Breathing Zone (BZ) and Source Gas Concentrations in ppm.

Table 3.14 Pond 18A Appurtenance Monitoring Results Summary (Updated 4Q12)

Date	TMP Enclosure														
	T-01					T-02					T-03				
	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside
	Ambient	BZ	Base	Lid		Ambient	BZ	Base	Lid		Ambient	BZ	Base	Lid	
7/28/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
10/25/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
11/23/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
12/20/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
1/18/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
2/23/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	11.50	0.00	-
2/24/11	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	-
3/16/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
4/19/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/15/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
7/12/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/14/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/10/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/25/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/8/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/21/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/20/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/8/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
11/20/12	-	-	-	-	-	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00
12/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/7/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Re-compacted soil around T-03 base and re-sampled.

Note: Re-sampled T-03 after tightening loose flange.

Note: Monitored after maintenance completed at T-03.

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan).

Table 3.14 Pond 18A Appurtenance Monitoring Results Summary (Updated 4Q12)

Cap Drainage Lift Station														
Date	LS-01							LS-02						
	Ambient Air		Leak Detection				Inside	Ambient Air		Leak Detection				Inside
	Ambient	BZ	Base	Lid	VP	OF		Ambient	BZ	Base	Lid	VP	OF	
7/28/10	0.00	0.00	NS	0.00	NS	NS	-	0.00	0.00	NS	0.00	NS	NS	-
10/25/10	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
11/23/10	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
12/20/10	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
1/18/11	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
2/23/11	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
3/16/11	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	-
4/19/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/18/11	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/15/11	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/12/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/14/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/10/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/25/11	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/8/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/21/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/20/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/5/12	0.00	0.00	0.00	0.00	0.00	0.00	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/9/12	0.00	0.00	0.00	0.00	0.00	0.00	10.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.03
10/8/12	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/7/12	0.00	0.00	Maintenance in Progress					0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/20/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-
12/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/7/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Monitored LS-01 after maintenance.

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan).

Table 3.14 Pond 18A Appurtenance Monitoring Results Summary (Updated 4Q12)

Instrumentation Panel																				
Date	Temperature & Pressure					LS-01					LS-02					LCDRS				
	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside	Ambient Air		Leak Detection		Inside
	Ambinet	BZ	Door	Conduit		Ambinet	BZ	Door	Conduit		Ambinet	BZ	Door	Conduit		Ambinet	BZ	Door	Conduit	
7/28/10	NS	NS	NS	NS	-	NS	NS	NS	NS	-	NS	NS	NS	NS	-	NS	NS	NS	NS	-
10/25/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
11/23/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
12/20/10	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
1/18/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
2/23/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
3/16/11	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-
4/19/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/15/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/12/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/14/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/10/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/25/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/8/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/21/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/20/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/8/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Maintenance in Progress			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/20/12	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-	-
12/4/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/7/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Monitored
LS-01 after
maintenance.

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan).

Table 3.14 Pond 18A Appurtenance Monitoring Results Summary (Updated 4Q12)

Perimeter Gas Collection Pipe Riser or Pressure Monitor									
Date	East Side					South Side			
	Ambient Air		Leak Detection			Ambient Air		Leak Detection	
	Ambient	BZ	Base	Outlet	TJ	Ambient	BZ	Base	Outlet
7/28/10	NS	NS	NS	NS	NS	NS	NS	NS	NS
10/25/10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/23/10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/20/10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2/23/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3/16/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/19/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/18/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/15/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/12/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/14/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/10/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/25/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/8/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/21/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/20/11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/13/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7/5/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8/9/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10/8/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/7/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/3/12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/7/13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

LCDRS Sump					
Date	Ambient Air		Leak Detection		Inside
	Ambient	BZ	Base	Lid	
7/28/10	0.00	0.00	NS	0.00	-
10/25/10	0.00	0.00	0.00	0.00	-
11/23/10	0.00	0.00	0.00	0.00	-
12/20/10	0.00	0.00	0.00	0.00	-
1/18/11	0.00	0.00	0.00	0.00	-
2/23/11	0.00	0.00	0.00	0.00	-
3/16/11	0.00	0.00	0.00	0.00	-
4/19/11	0.00	0.00	0.00	0.00	0.00
5/18/11	0.00	0.00	0.00	0.00	0.00
6/15/11	0.00	0.00	0.00	0.00	0.00
7/12/11	0.00	0.00	0.00	0.00	0.00
8/9/11	0.00	0.00	0.00	0.00	0.00
9/14/11	0.00	0.00	0.00	0.00	0.00
10/10/11	0.00	0.00	0.00	0.00	0.00
10/25/11	0.00	0.00	0.00	0.00	0.00
11/8/11	0.00	0.00	0.00	0.00	0.00
11/21/11	0.00	0.00	0.00	0.00	0.00
12/20/11	0.00	0.00	0.00	0.00	0.00
1/13/12	0.00	0.00	0.00	0.00	0.04
4/5/12	0.00	0.00	0.00	0.00	0.00
5/9/12	0.00	0.00	0.00	0.00	0.00
6/5/12	0.00	0.00	0.00	0.00	0.00
7/5/12	0.00	0.00	0.00	0.00	0.00
8/9/12	0.00	0.00	0.00	0.00	0.00
9/17/12	0.00	0.00	0.00	0.00	0.00
10/8/12	0.00	0.00	0.00	0.00	0.00
11/7/12	0.00	0.00	0.00	0.00	0.00
12/3/12	0.00	0.00	0.00	0.00	0.00
1/7/13	0.00	0.00	0.00	0.00	0.04

Appurtenance Monitoring includes:

Ambient Air : Ambient (12" around appurtenances) and Breathing Zone (BZ)

Leak Detection : Source of potential leak (within 1" to 2" of Base, Lid, Inside, View Port [VP], OverFlow [OF], Door, Conduit, Outlet, and Transmitter Joint [TJ])

NS = Not Surveyed (monitoring not part of Site-Wide Gas Assessment Work Plan).

Table 3.16 Pond 18A Soil Gas Monitoring Results Summary (Updated 4Q12)

Perimeter Shallow Probes																				
Location	Probe # 1		Probe # 2		Probe # 3		Probe # 4		Probe # 5		Probe # 6		Probe # 7		Probe # 8		Probe # 9		Probe # 10	
Date	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG
7/26/2010	0.00/0.00	0.00	0.00/0.00	2.81	0.00/0.00	0.63	0.00/0.00	58	0.00/0.00	0.01	0.00/0.00	0.21	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.03	0.00/0.00	0.00
12/16/2010	0.00/0.00	0.08	0.00/0.00	19	0.00/0.00	1.58	0.00/0.00	55	0.00/0.00	0.04	0.00/0.00	1.34	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/18/2011	0.00/0.00	0.11	0.00/0.00	156	0.00/0.00	3.99	0.00/0.00	658	0.00/0.00	0.32	0.00/0.00	2.74	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
2/22/2011	0.00/0.00	0.00	0.00/0.00	106	0.00/0.00	121	0.00/0.00	1000+	0.00/0.00	0.68	0.00/0.00	0.17	0.00/0.00	0.02	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00
3/3/2011	0.00/0.00	0.00	0.00/0.00	6.75	0.00/0.00	3.30	0.00/0.00	1000+	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
4/12/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
5/4/2011	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
5/25/2011	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
6/20/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
7/27/2011	0.00/0.00	0.03	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00
8/24/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
9/20/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
10/10/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
10/25/2011	0.00/0.00	0.00	0.00/0.00	0.19	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
11/8/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
11/21/2011	0.00/0.00	0.02	0.00/0.00	0.09	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/20/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/13/2012	0.00/0.00	0.00	0.00/0.00	3.68	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
2/7/2012	0.00/0.00	0.00	0.00/0.00	1.06	0.00/0.00	0.00	0.00/0.00	0.07	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
3/6/2012	0.00/0.00	0.07	0.00/0.00	38	0.00/0.00	6.92	0.00/0.00	23	0.00/0.00	0.08	0.00/0.00	0.71	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
3/22/2012	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.12	0.00/0.00	0.78	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.02
4/3/2012	0.00/0.00	0.17	0.00/0.00	5.04	0.00/0.00	0.15	0.00/0.00	1.41	0.00/0.00	0.04	0.00/0.00	0.34	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
5/8/2012	0.00/0.00	0.05	0.00/0.00	0.27	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01
6/5/2012	0.00/0.00	0.00	0.00/0.00	9.70	0.00/0.00	0.58	0.00/0.00	6.07	0.00/0.00	0.00	0.00/0.00	0.06	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
7/5/2012	0.00/0.00	0.00	0.00/0.00	0.49	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
8/8/2012	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
9/18/2012	0.00/0.00	0.03	0.00/0.00	0.06	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.11
10/8/2012	0.00/0.00	0.00	0.00/0.00	3.75	0.00/0.00	0.02	0.00/0.00	0.94	0.00/0.00	0.00	0.00/0.00	0.13	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
11/6/2012	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/3/2012	0.00/0.00	0.00	0.00/0.00	66	0.00/0.00	3.58	0.00/0.00	84	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/7/2013	0.00/0.00	0.00	0.00/0.00	20	0.00/0.00	1.70	0.00/0.00	4.90	0.00/0.00	0.05	0.00/0.00	0.26	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00

Breathing Zone [BZ], 4-6" Above Ground Surface [AGS], and Average Soil Gas [SG] readings in ppm.

Table 3.16 Pond 18A Soil Gas Monitoring Results Summary (Updated 4Q12)

Step-Out Probes																
Location	Probe # 2A		Probe # 4A		Probe # 7A		Probe # 9A		Probe # LS-1 A		Probe # LS-1 B		Probe # LS-2 A		Probe # LS-2 B	
Monitor Elevation	4448.7		4448.7		4448.7		4448.7		4449.2		4449.2		4450.0		4450.0	
Depth Below Ground Surface (ft)	3.25		3.50		3.00		2.50		2.85		2.85		3.00		3.00	
Date	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG	BZ/AGS	SG
5/4/2011	0.00/0.00	0.01	0.00/0.00	0.06	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.03
5/25/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.04	0.00/0.00	0.03
6/20/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
7/27/11	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
8/24/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
9/20/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
10/10/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
10/25/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
11/8/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
11/21/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/20/2011	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/13/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
2/7/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
3/6/2012	0.00/0.00	1.57	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	4.25	0.00/0.00	1.79
3/22/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00
4/3/2012	0.00/0.00	0.04	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	1.27	0.00/0.00	0.51
5/8/2012	0.00/0.00	0.03	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.16
6/5/2012	0.00/0.00	0.04	0.00/0.00	0.04	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.00	0.00/0.00	0.00
7/5/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
8/8/2012	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
9/18/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.05	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.02
10/8/2012	0.00/0.00	0.02	0.00/0.00	0.03	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.02	0.00/0.00	0.00	0.00/0.00	0.00
11/6/2012	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
12/3/2012	0.00/0.00	0.99	0.00/0.00	0.10	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00
1/7/2013	0.00/0.00	0.10	0.00/0.00	0.05	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.00	0.00/0.00	0.01	0.00/0.00	0.03

Breathing Zone [BZ] and Average Soil Gas [SG] readings in ppm.

Table 5.1 RCRA Pond Phosphine Monitoring Programs into 1Q2013¹ (Updated 4Q12)

Pond	Air Monitoring Plan ²		Soil Gas	Perimeter pipe	TMP
	Surface Scan	Appurtenance			
8S	Annual (3Q 13) ³	Annual (3Q 13) ³	None	None	None
9E	Annual (3Q 13) ³	Annual (3Q 13) ³	None	None	None
Phase IV	Annual (3Q 13) ³	Annual (3Q 13) ³	None	None	None
8E	Annual (3Q 13) ³	Annual (3Q 13) ³	None	None	None
17	Annual (3Q 13) ³	Annual (3Q 13) ³	None	None	None
18A	Monthly (May 12) ^{2,4}	Monthly (May 12) ^{2,4}	Monthly	Monthly	None
16S	Monthly (April 12) ^{2,5}	Monthly (April 12) ^{2,5}	Monthly	Monthly	Monthly
15S	Annual (3Q 13) ³	Annual (3Q 13) ³	Monthly ^{6,7}	East and SW - GES ops ^{6,7}	Monthly ^{6,7}

Notes:

¹ Shaded cells indicate recommended monitoring pursuant to extension of the Phosphine Assessment Monitoring program. FMC performed the 1Q12 quarterly updated evaluations for Ponds 16S and 18A that documents triggering increased monitoring at Pond 16S per the Air Monitoring Plan. Any future updates will potentially include recommendation(s) for further modification of the monitoring program and/or commencing gas extraction and treatment at these ponds.

² Monitoring pursuant to the RCRA Pond UAO – SOW Task 1 – Air Monitoring Plan (AMP) – Part I and Part II, January 2011 until satisfaction and termination of the RCRA Pond UAO which is currently anticipated following successful completion of the performance standard compliance demonstration period at Pond 15S in May 2013. Appurtenance and, if triggered, surface scan monitoring would then be performed pursuant to Section 3 of the amended RCRA Post-Closure Plan.

³ Quarter and year indicates next scheduled round of monitoring based on the annual frequency in the RCRA Pond UAO AMP. Following successful completion of the performance standard compliance demonstration period at Pond 15S in May 2013 and satisfaction / termination of the RCRA Pond UAO, appurtenance and, if triggered, surface scan monitoring would then be performed pursuant to Section 3 of the amended RCRA Post-Closure Plan.

⁴ As recommended in the Assessment Study 1Q12 Update Tech Memo, monthly frequency began May 2012.

⁵ As reported in the 1Q12 Tech Memo, the Pond 16S north perimeter pipe monitoring result on April 3, 2012 was greater than 2,000 ppm which triggered monthly cap perimeter and appurtenance monitoring that was initiated in April per the AMP.

⁶ Monitoring pursuant to the Pond 15S Interim Progress Report on Gas Extraction and Treatment, August 6, 2012, as approved with condition for monthly TMP monitoring by EPA email October 5, 2012 until satisfaction and termination of the RCRA Pond UAO which is currently anticipated following successful completion of the performance standard compliance demonstration period at Pond 15S in May 2013. Pond 15S perimeter pipe monitoring would then be performed pursuant to Section 3 of the amended RCRA Post-Closure Plan.

⁷ Pond 15S east and southwest standpipe monitoring will be based on GES operating data / monthly UAO performance objective compliance demonstration monitoring (i.e., dilution box) pursuant to FMC's email regarding GES deployment and EPA's email acknowledgement, both dated October 12, 2012, confirming replotment/reconfiguration of gas extraction and treatment to the east and SW perimeter pipe standpipes until anticipated completion of the performance standard compliance demonstration period in May 2013.

FIGURE 4-3. Pond 16S Average TMP and Perimeter Individual and Average Standpipe PH3 Concentration (Updated 4Q12)

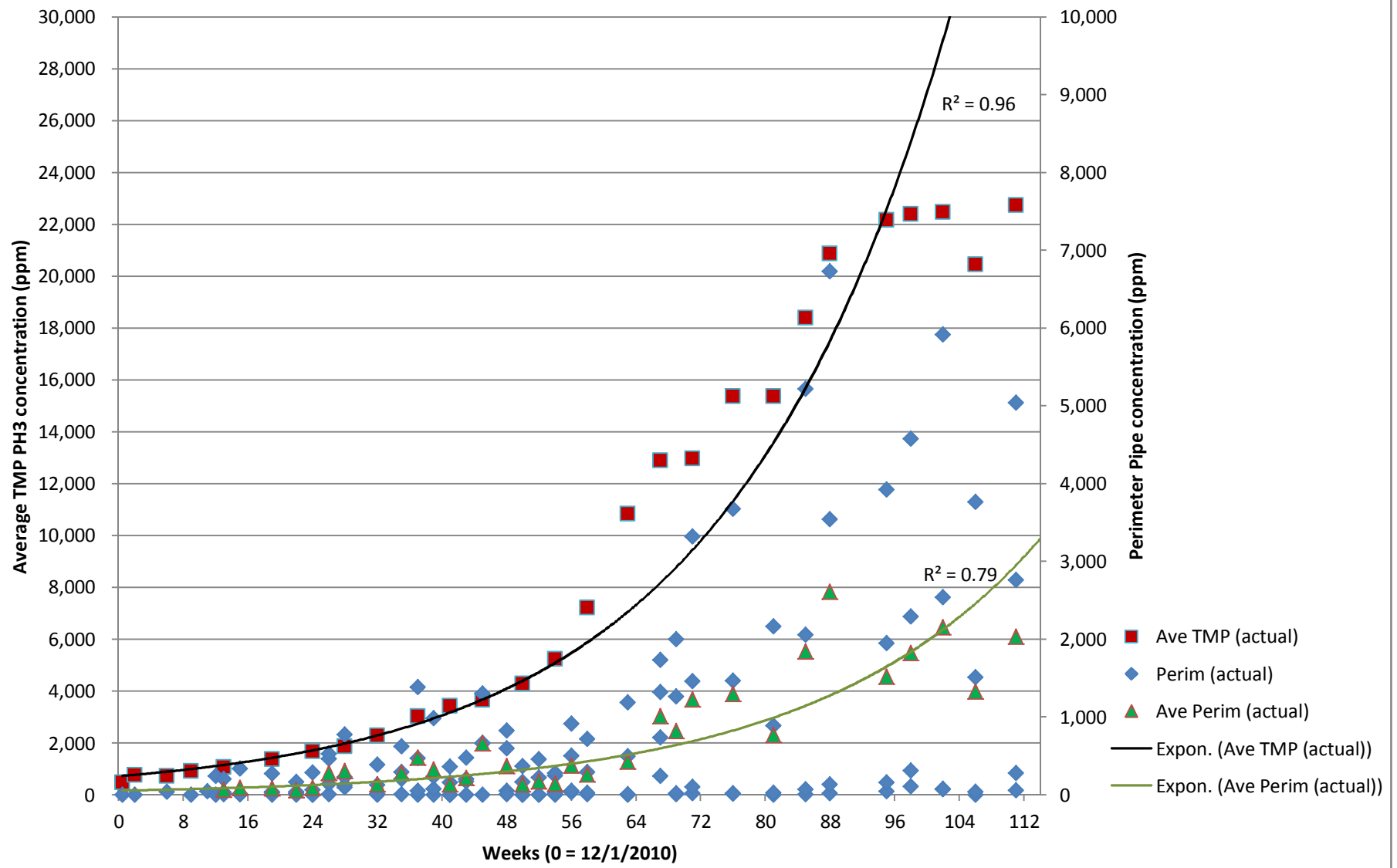


Figure 4-4. Pond 16S TMP Phosphine Concentrations (Updated 4Q12)

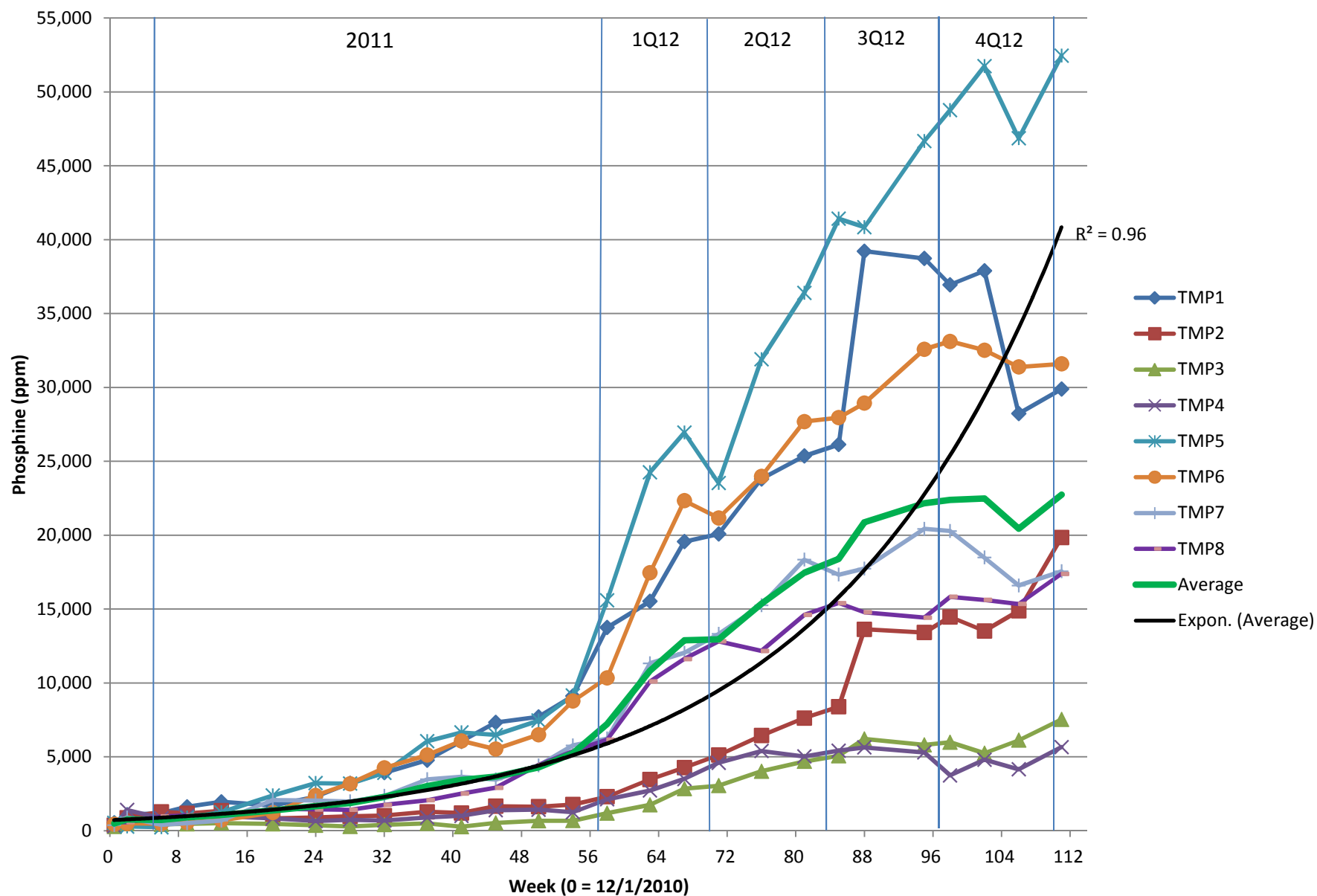


Figure 4-5. Pond 16S Perimeter Pipe Phosphine Concentrations (Updated 4Q12)

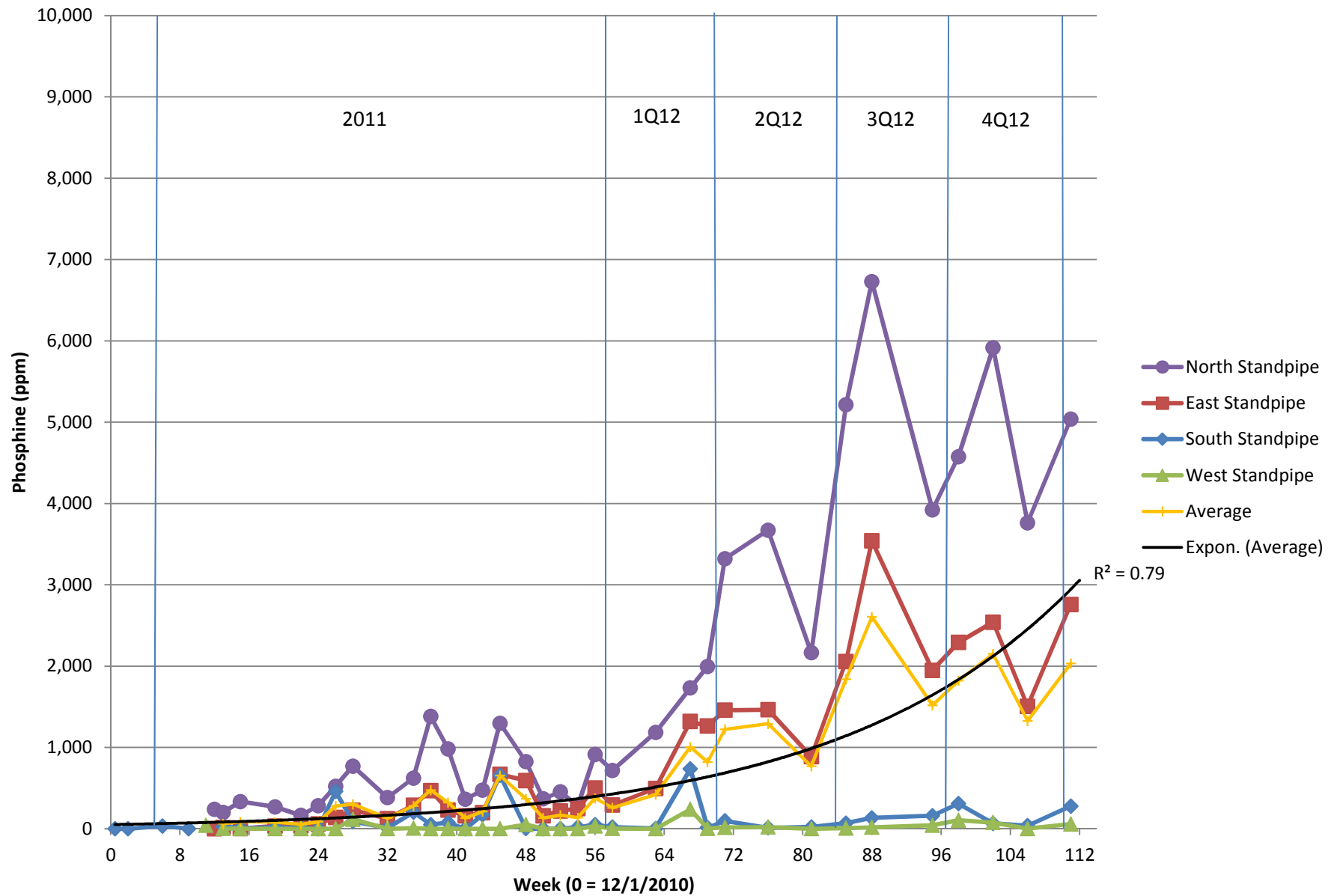


Figure 4-6g. Barometric Pressure during Pond 18A Perimeter Surface Scan Monitoring on November 8 and Re-monitoring on November 14, 2012

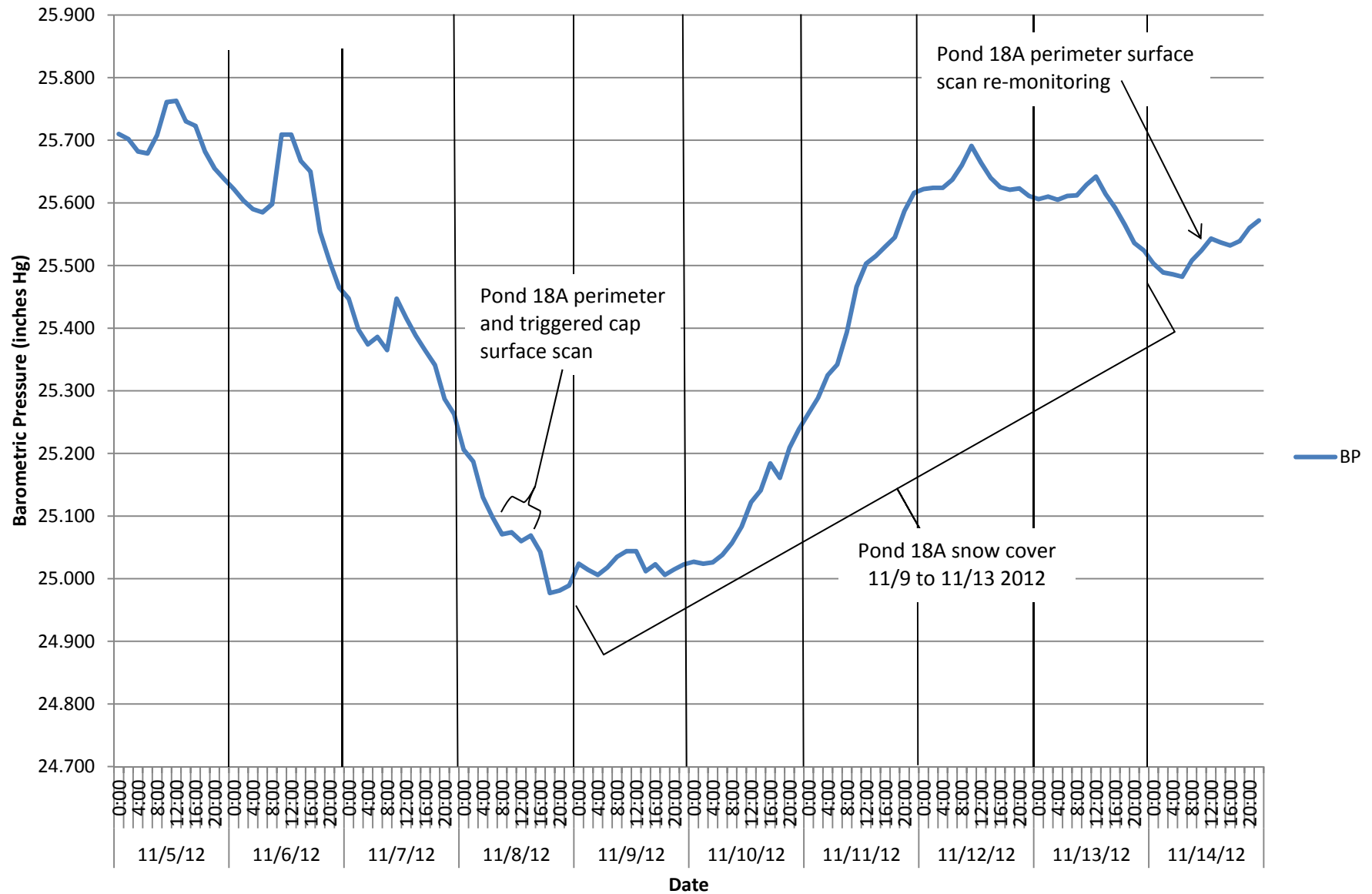


Figure 4-7. Pond 16S Soil Gas Probe Phosphine Concentrations (Updated 4Q12)

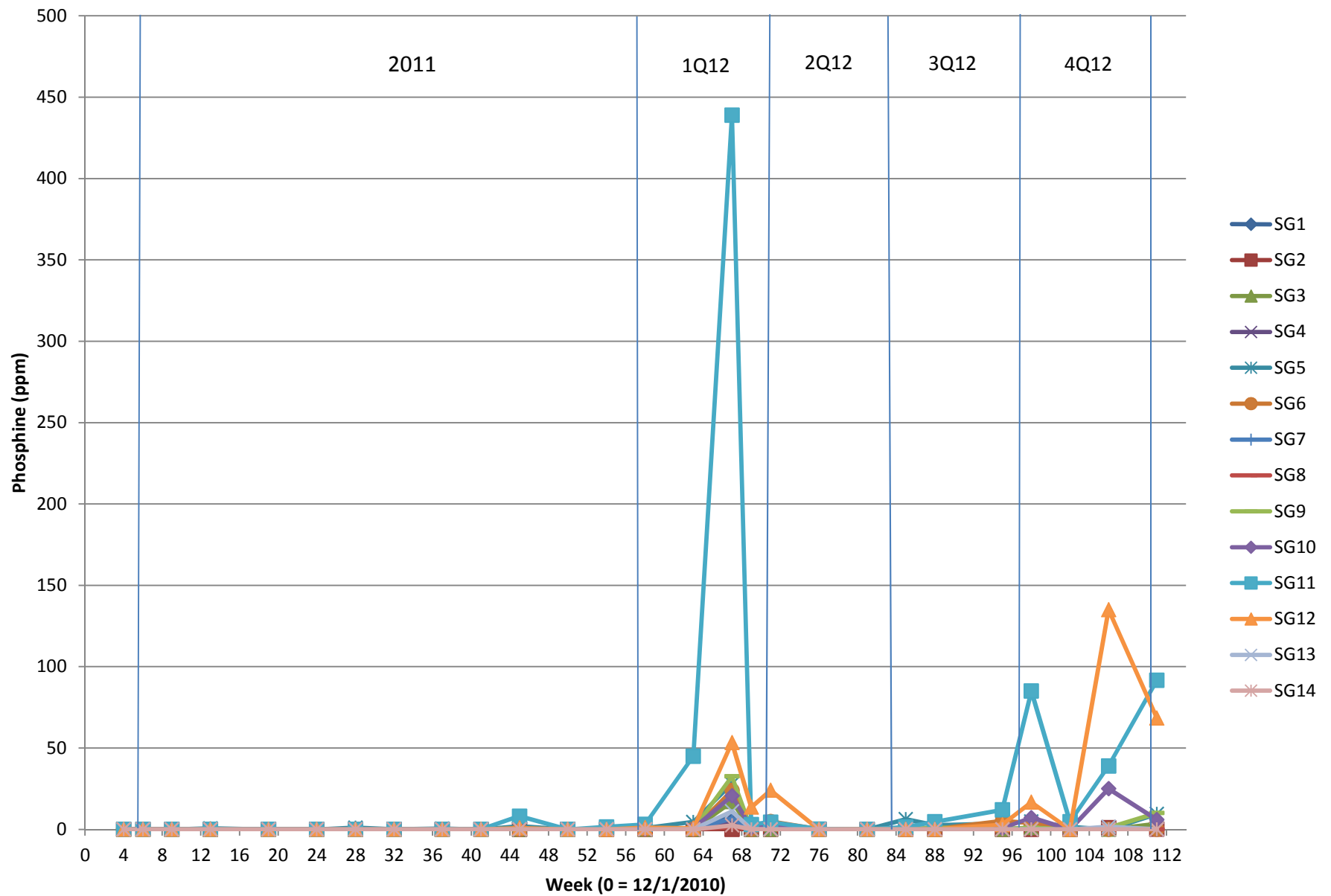
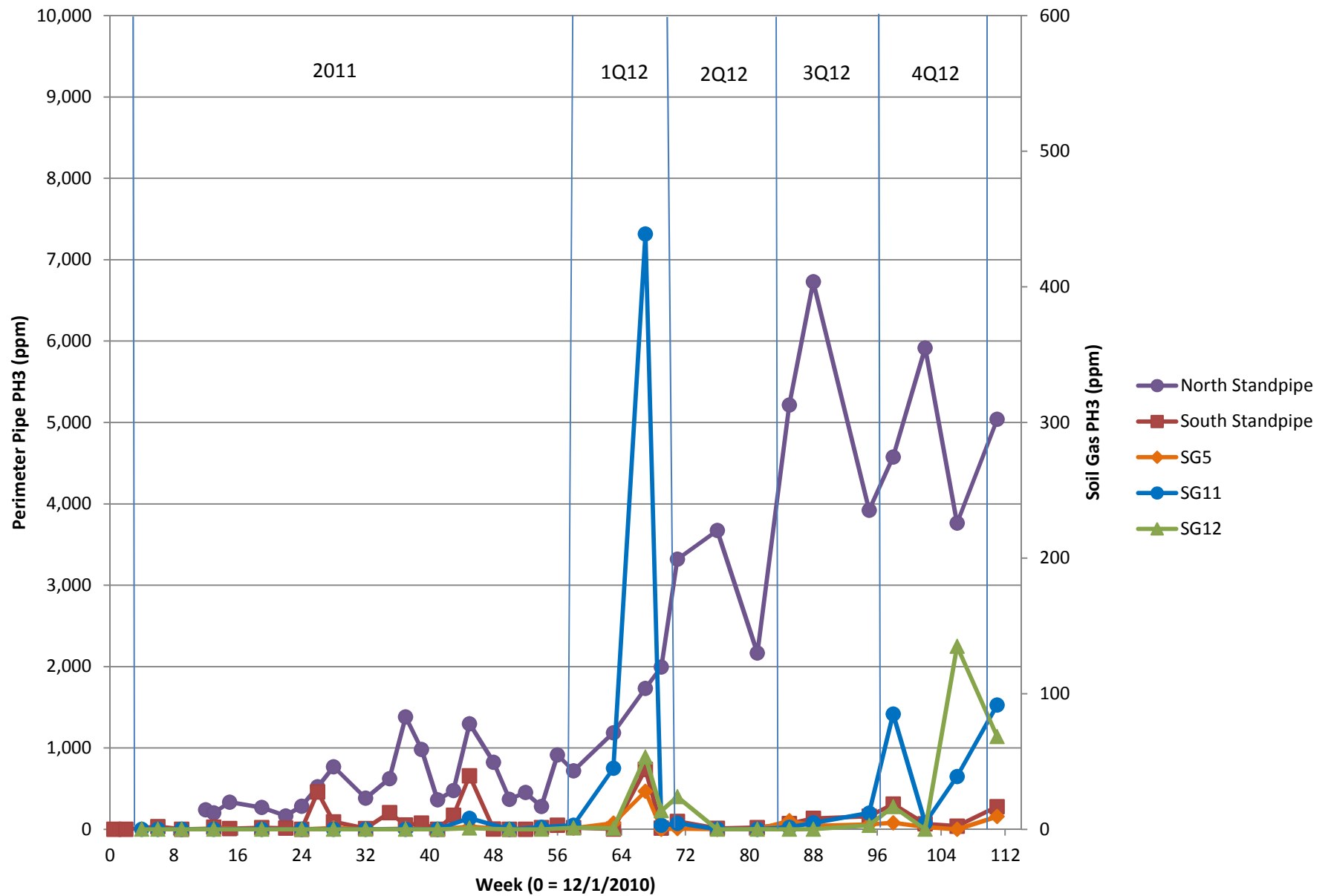


Figure 4-8. Pond 16S N and S Perimeter Pipe and Soil Gas 5 and 11 (Updated 4Q12)



East Standpipe (SP) Monthly GES Average March 31 to Oct 5, 2011

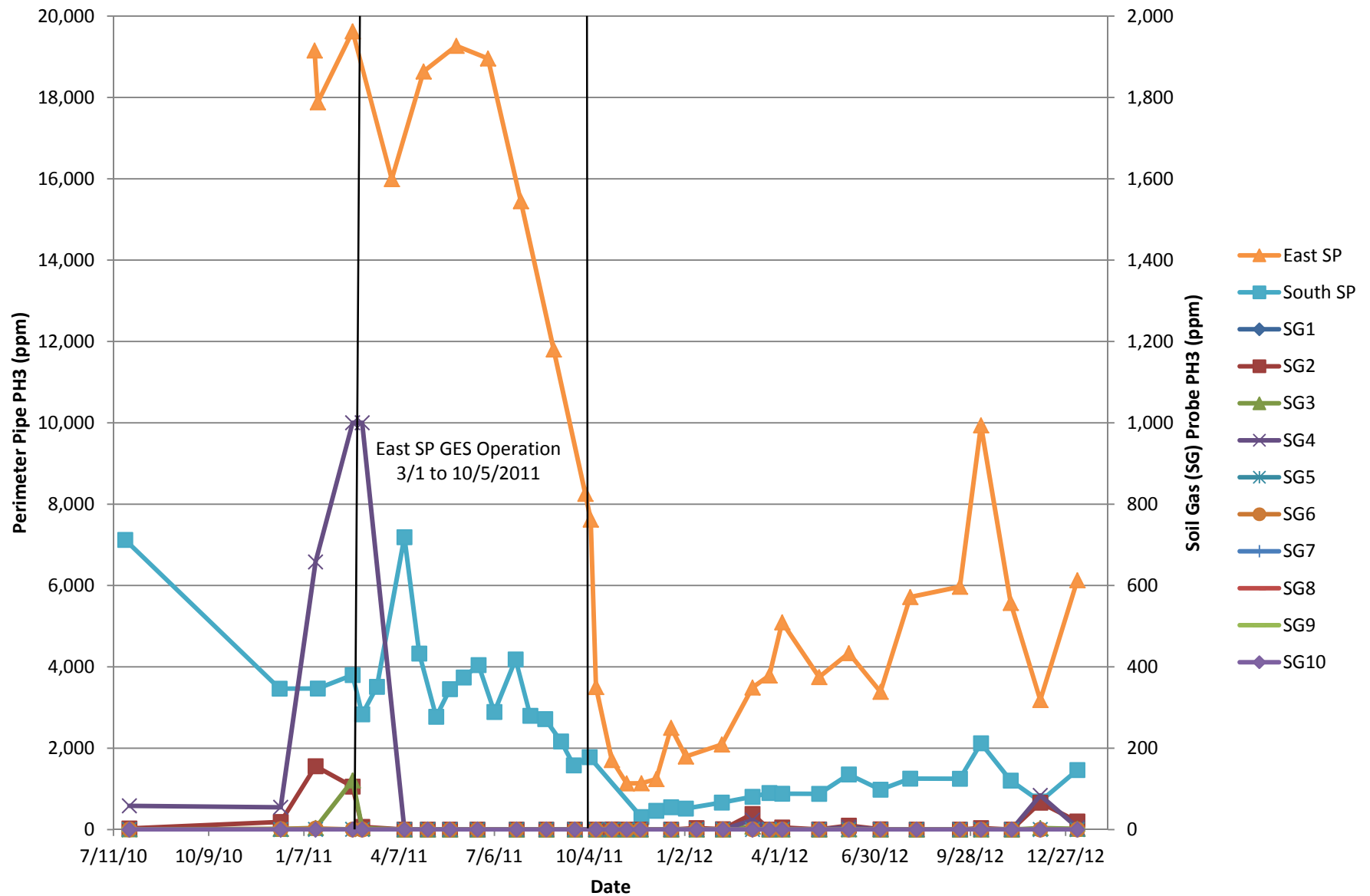


Figure 4-12. Pond 18A Perimeter Pipe and Shallow Soil Gas (Updated 4Q12)
October 2011 to January 2013

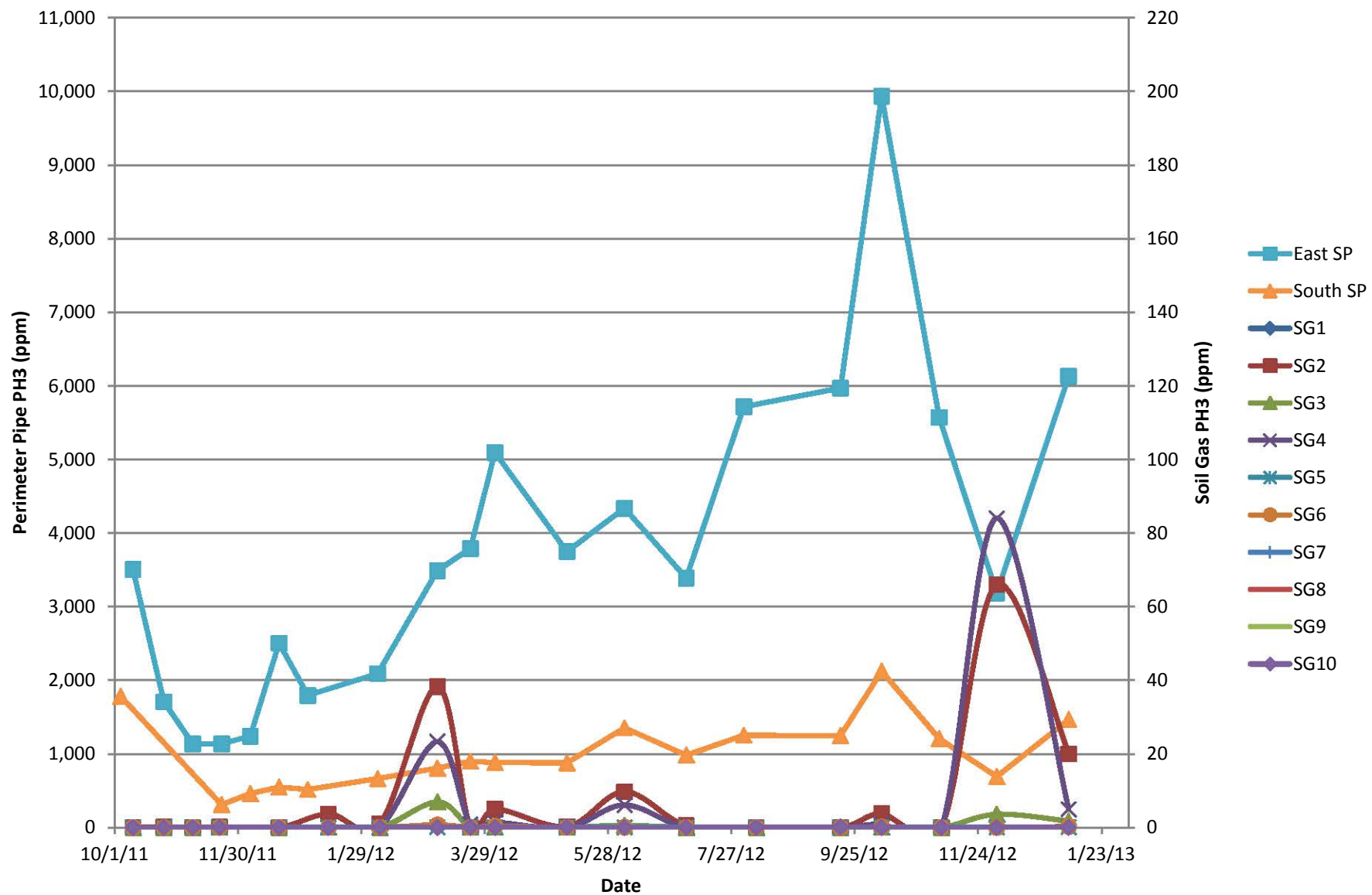


Figure 4-13. Barometric Pressure 2012 - FMC Pocatello, ID Met Station

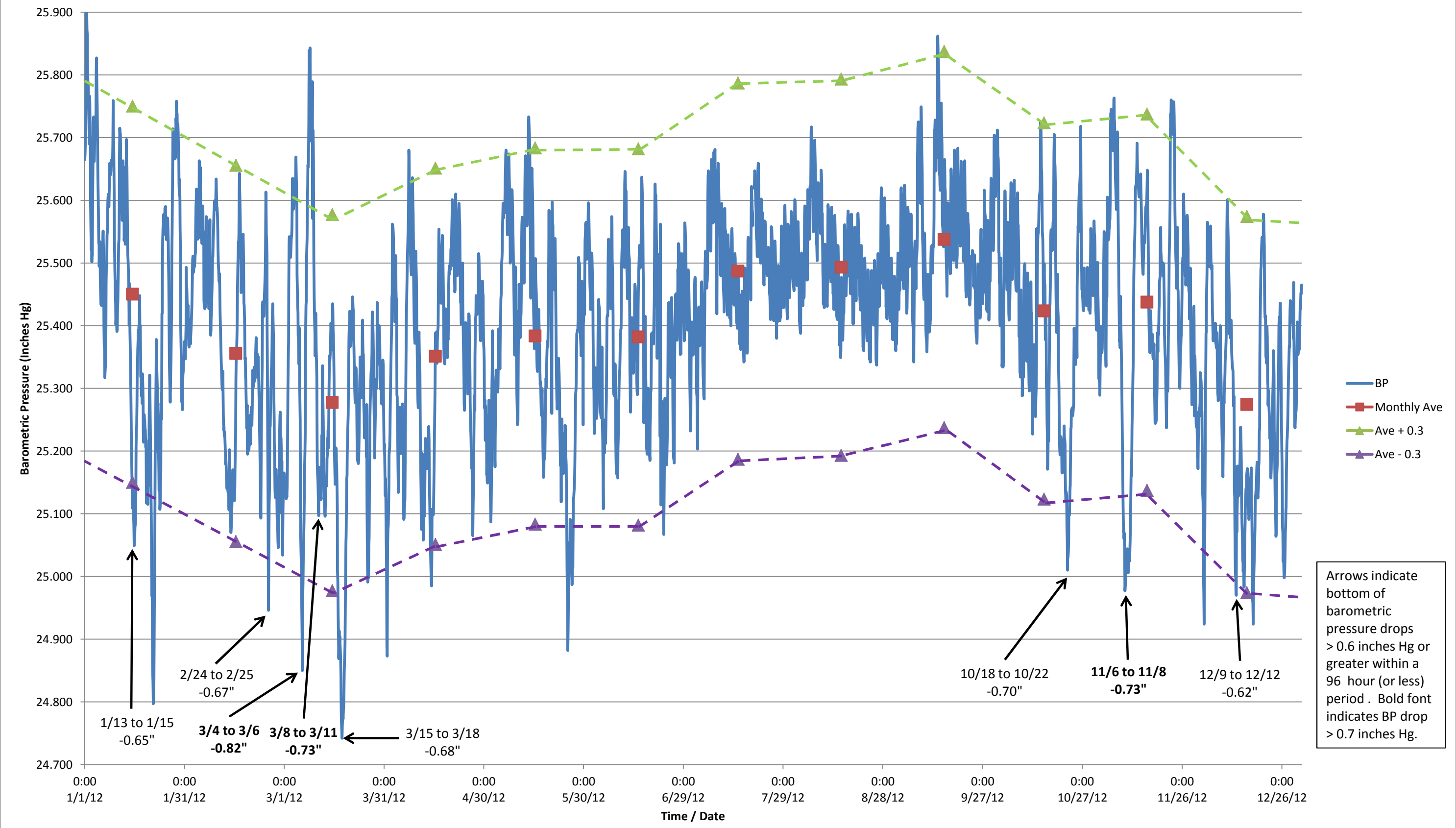


Figure 5-1a. Pond 16S TMP, Perimeter Pipe and Soil Gas Trends (Updated 4Q12)

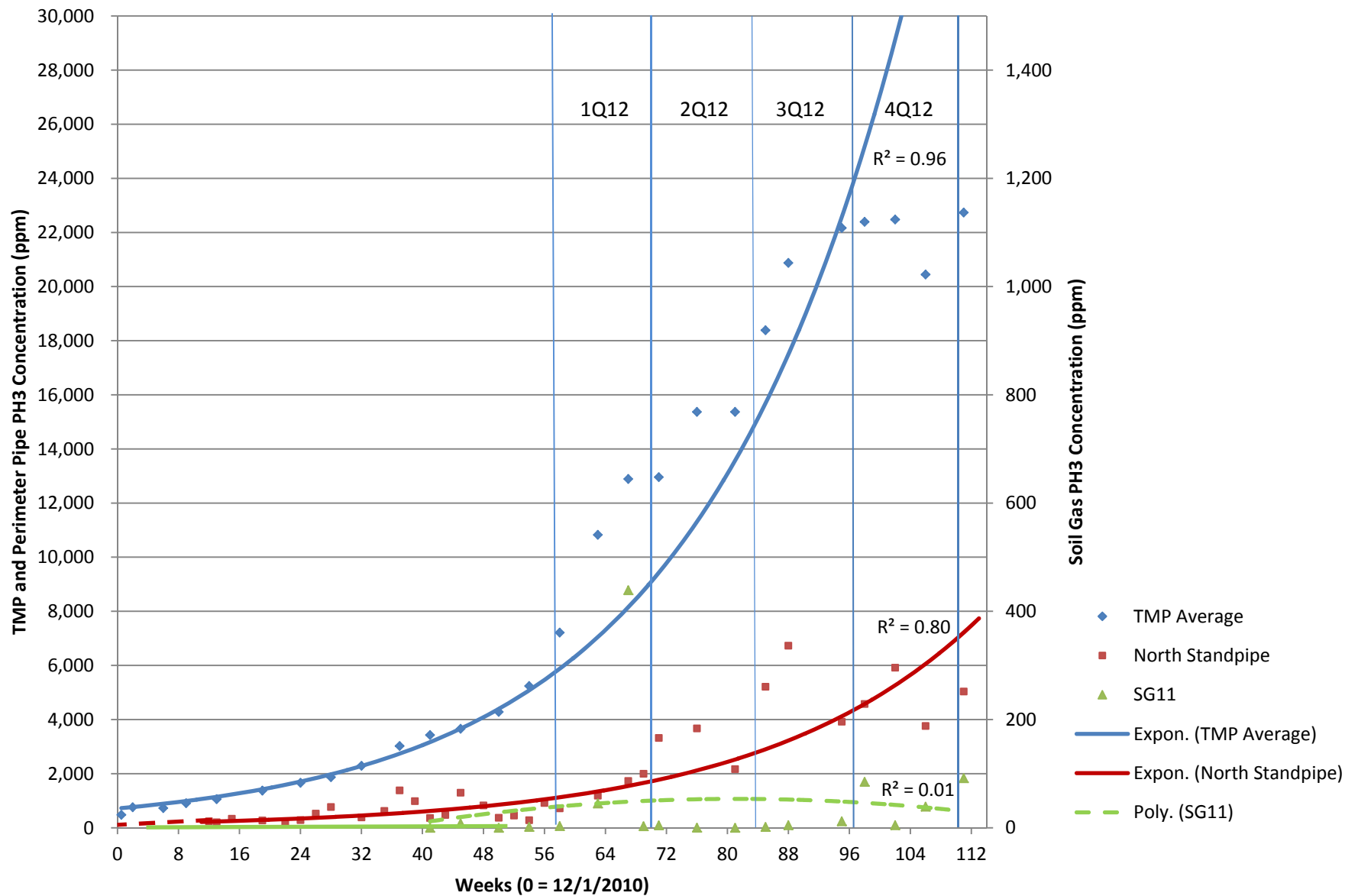


Figure 5-1b. Pond 16S TMP, Perimeter Pipe and Soil Gas Trends (Updated 4Q12)
Regression on North Standpipe Week 50 (11/8/11) Forward

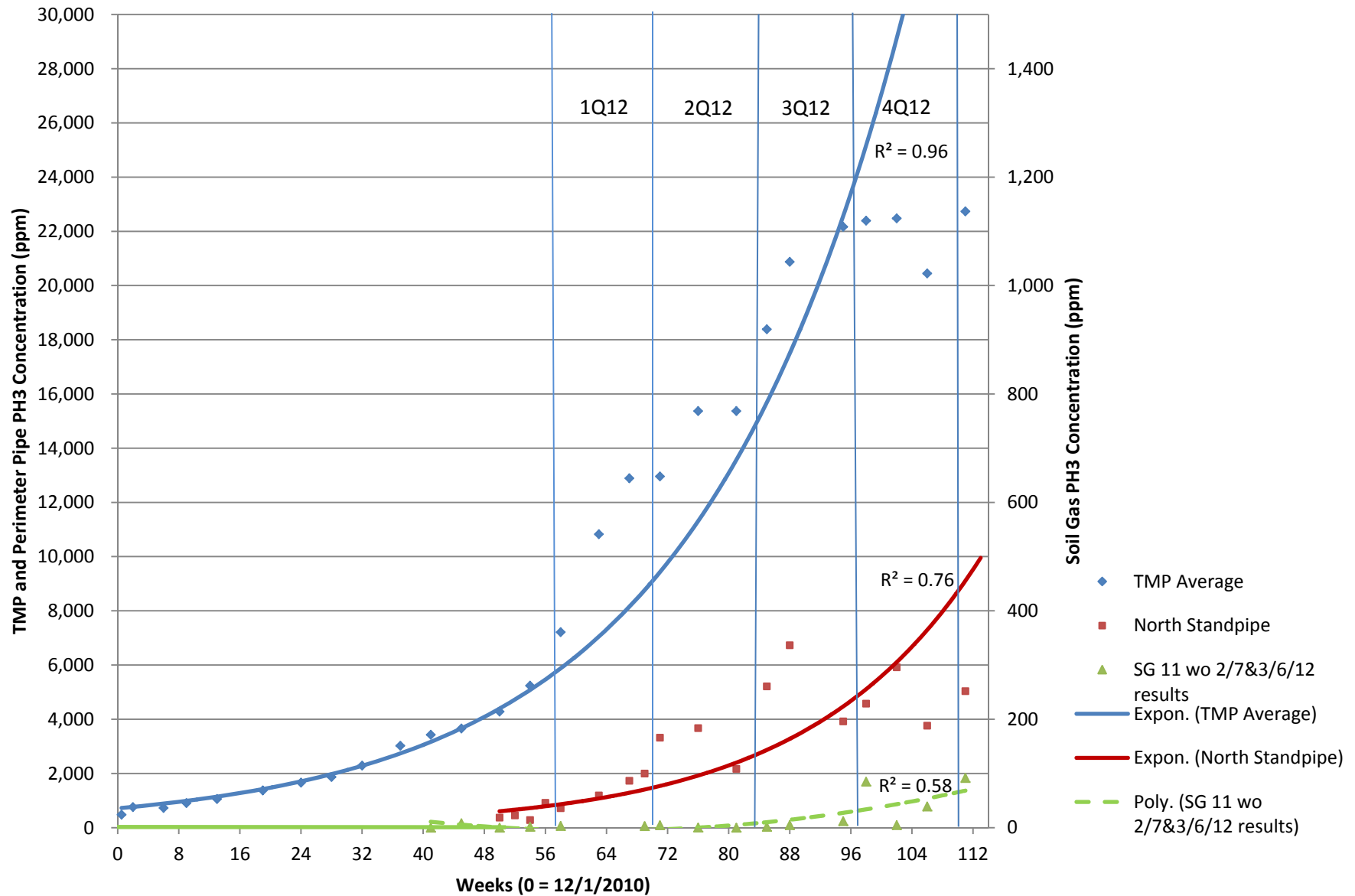


Figure 5-2. Pond 18A Perimeter Pipe and Shallow Soil Gas Trends (Updated 4Q12)

November 21, 2011 to January 7, 2013 Actual

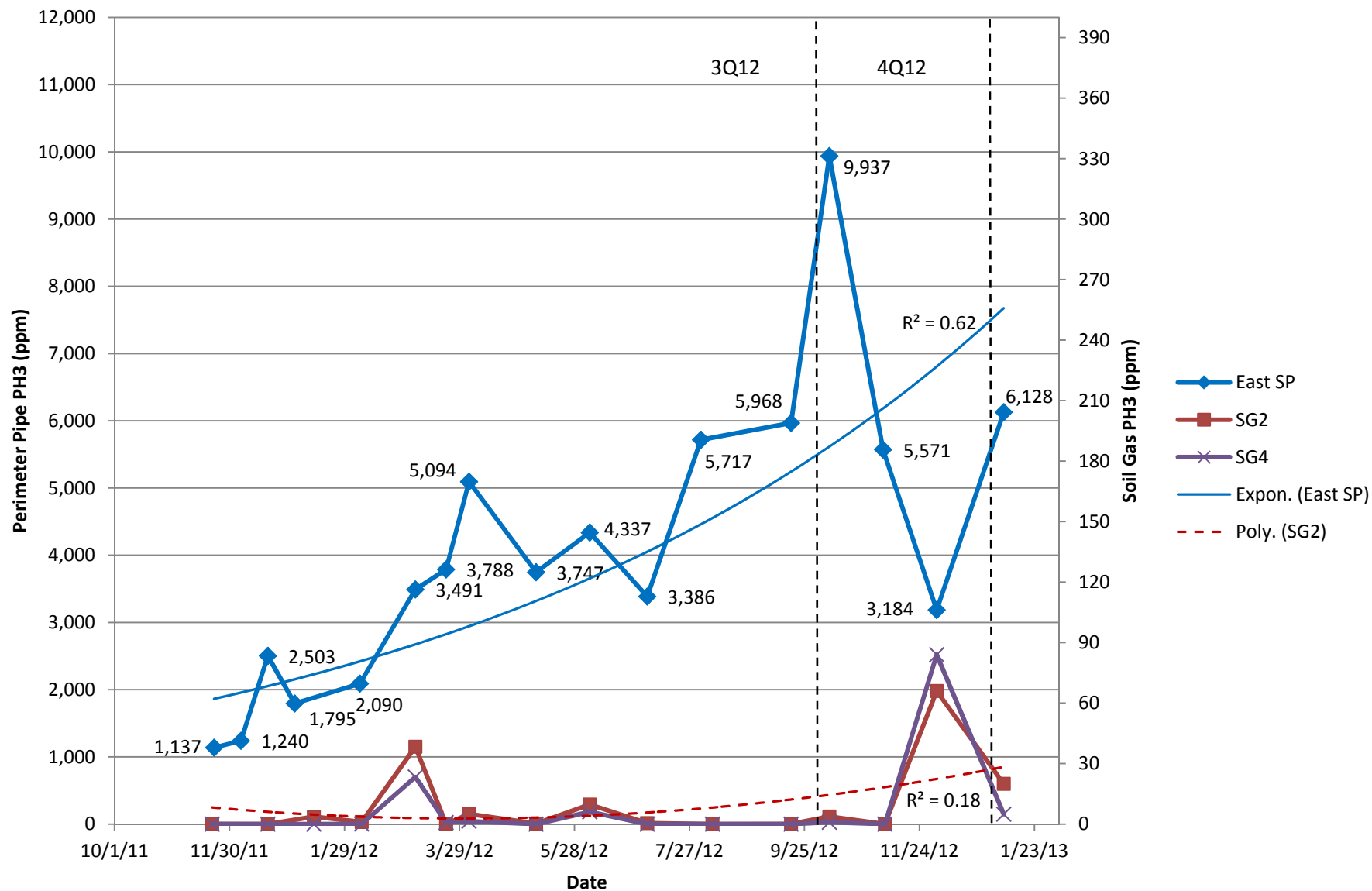


Figure 5-3. Pond 18A Perimeter Pipe - Extraction and Rebound Trends through January 2013
East Standpipe (SP) Monthly GES Average March 31 to Oct 5, 2011

